BIOLOGY NMDCAT

BIOLOGICAL MOLECULES, ENZYMES

Q.1 The most abundant organic compound to be found in any type of cell is:
A. Carbohydrates B. Proteins
C. Lipids D. Water

Q.2 ______________ act as product as well as reactant of photosynthesis.
A. Glycine B. Ribose
C. Glucose D. Water

Q.3 The compounds which on hydrolysis yield polyhydroxy aldehyde or ketone subunits are:
A. Lipids B. Nucleic acids
C. Proteins D. Carbohydrates

Q.4 The type of chemical reaction which correctly justifies the synthesis of cellulose is:
A. Hydrolysis B. Condensation
C. Decarboxylation D. Reduction

Q.5 Which of the following is not a macromolecule?
A. Nucleic acid B. Glucose
C. Polysaccharides D. Proteins

Q.6 Most common ring structure formed by glucose molecule is:
A. 4 cornered B. 5 cornered
C. 6 cornered D. 7 cornered

Q.7 Monosaccharides are major components of:
A. DNA, ATP, ribulose bisphosphate and cysteine
B. DNA, NADP, ATP and ribulose bisphosphate
C. DNA, NAD and Insulin
D. DNA, RNA and myosin

Q.8 The type of polysaccharides which can be stored in plants and animals are______________ and ______________, respectively.
A. Starch, cellulose B. Glycogen, cellulose
C. Starch, glycogen D. Glycogen, starch

Q.9 ________________is the most abundant carbohydrate in nature.
A. Cellulose B. Dextrins
C. Chitin D. Starch

Q.10 It is an example of keto-triose, produced by the splitting of fructose 1,6-bisphosphate during glycolysis:
A. Glyceraldehyde B. Ribose
C. Dihydroxyacetone D. Xylulose

Q.11 Identify the type of carbohydrates which has high molecular weight and sparingly soluble in water:
A. Monosaccharides B. Oligosaccharides
C. Disaccharides D. Polysaccharides

Q.12 1,4-glycosidic linkage is found in all of the following carbohydrates except:
A. Sucrose B. Maltose
C. Lactose D. Amylose

Q.13 All of the following are common in all amino acids except:
A. Amino group B. Carboxyl group
C. Alpha carbon D. R-group

Q.14 The number of amino acids that have been found to occur in cells and tissues are:
A. 170 B. 25
C. 20 D. 45

Q.15 A protein molecule is related to all of the following except:
A. Homopolymer B. Polypeptide
C. Heteropolymer D. Peptide bond formation

Q.16 Which of the following holds the alpha helix of protein in its place?
A. Hydrogen bond B. R-group
C. Amino group D. Disulphide bond

Q.17 The most abundant protein to be found in animals is:
A. Myoglobin B. Hemoglobin
C. Collagen D. Albumin

Q.18 Which of these is not significant to maintain quaternary structure of proteins?
A. Peptide bonds B. Hydrogen bonds
C. Ionic bonds D. Hydrophobic interactions

SKN

Q.19 In an insulin molecule, the polypeptide chains are held together by:
A. Peptide bond B. Disulphide bridges
C. Hydrogen bond D. Ionic interaction

Q.20 If a protein molecule having two polypeptide chains and 990 amino acids, then how many water molecules were released during its synthesis?
A. 987 B. 988
C. 989 D. 990

Q.21 The structure of a fibrous protein comprises of polypeptide chains in the form of:
A. Cluster B. Spherical or curled up ball
C. Flat uncoiled chains D. Long strands or fibrils

Q.22 All of the following are included in lipids except:
A. Acylglycerols B. Terpenoids
C. Sphingolipids D. Chitin

Q.23 Acylglycerols are esters formed by condensation reaction between:
A. Fatty acids and water B. Fatty acids and glucose
C. Fatty acids and alcohols D. Fatty acids and phosphates

Q.24 A fatty acid is unsaturated if it contains double bond between:
A. Carbon and hydrogen B. Carbon and oxygen
C. Carbon and carbon D. Oxygen and oxygen

Q.25 Specific properties of tail in phospholipid molecule is due to:
A. Glycerol B. Phosphate group
C. Fatty acid D. Nitrogenous base

Q.26 From the following options, identify an example of phospholipids:
A. Palmitic acid B. Butyric acid
C. Lecithin D. Phosphatidic acid

Q.27 Cuticle is an example of:
A. Acylglycerol B. Wax
C. Phospholipid D. Terpenoids

Q.28 The hormones of adrenal cortex and gonads belong to:
A. Terpenoids B. Diacyglycerol
C. Glycolipds D. Tyrosine

Q.29 It is not a chemical component of lecithin molecule:
A. Isoprenoid B. Fatty acids
C.Glycerol D. Phosphate group and choline

Q.30 What are the features of triglycerides?

	Polar	**Less dense Than water**	**Higher energy value than carbohydrates**	**Lower proportion of hydrogen than in carbohydrates**
A.	✓	✓	×	×
B.	✓	×	✓	✓
C.	×	✓	✓	×
D.	×	×	×	✓

Q.31 The combination of a pentose sugar with a base result in a compound known as:
A. Nucleotide B. Nucleic Acid
C. Nucleoside D. Polynucleotide

Q.32 Phosphodiester bond is:
A. P—O—C—P—O—C B. C—O—P—O—C
C. C—O—P D. C—N—C—O—P

Q.33 Which one is an example of mono-nucleotide?
A. Adenosine B. Guanine
C. ATP D. NAD^+

Q.34 All of the following molecules are directly synthesized from DNA except:
A. DNA B. tRNA
C. Protein D. mRNA

Q.35 It is the usual mode of flow of genetic information within the cells:
A. DNA → Ribosome → Protein B. DNA → rRNA → Protein
C. DNA → tRNA → Protein D. DNA → mRNA → Protein

Q.36 Most of the cellular secretions are ___________ in nature.
A. Glycoprotein B. Nucleolipid
C. Glycolipid D. Nucleohistone

Q.37 ___________ play an important role in regulation of gene expression.
A. Glycoprotein B. Nucleolipid
C. Glycolipid D. Nucleohistone

SKN

Q.38 Enzymes increase the rate of reaction by:
A. Increasing temperature
B. Decreasing activation energy
C. Decreasing pH
D. Increasing product concentration

Q.39 All of the following correctly describe the active site of an enzyme except:
A. It is small relative to the entire enzyme
B. It is two dimensional in structure
C. Specificity is defined by arrangement of certain amino acids
D. It initially binds substrates by weak attractions

Q.40 The non-protein part of enzyme which is covalently and permanently bonded is called:
A. Prosthetic group
B. Co-Enzyme
C. Co-Factor
D. Activator

Q.41 It acts as precursor substance for coenzymes used by various enzymes during cellular metabolism:
A. Proteins
B. Carbohydrate
C. Nucleic acids
D. Vitamins

Q.42 According to ____________ model, the active site of enzyme is modified as the substrate interacts with enzyme.
A. Induced fit
B. Emil Fischer
C. Lock and key
D. Fluid Mosaic

Q.43 Ionization of active sites and substrates are affected by:
A. Slight change in temperature
B. Extreme change in temperature
C. Slight change in pH
D. Extreme change in pH

Q.44 If due to high temperature, globular structure of enzyme is destroyed, enzyme is said to be:
A. Activated
B. Inactivated
C. Denatured
D. Catalyzed

Q.45 The competitive inhibitors have structural similarity with:
A. Active site
B. Substrate
C. Binding site
D. Co-enzyme

Q.46 In eukaryotes, enzymes are mostly:
A. Present in extracellular fluid
B. Attach to membrane system
C. Suspended in cytoplasm
D. Present in lumen of organs

Q.47 Succinate dehydrogenase converts succinate into:
A. Malate
B. Citrate
C. Malonic acid
D. Fumarate

Q.48 Any agent which reduces or stops the rate of reaction of enzymes is termed as:
A. Inhibitors
B. Promoter
C. Repressors
D. Activator

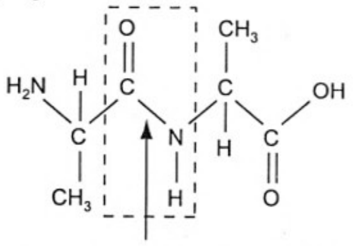
Q.49 It is the common requirement of all enzymes working in living organisms:
A. Acidic medium
B. Basic medium
C. Aqueous medium
D. Alkaline medium

Q.50 If all the active sites are occupied, then rate of reaction would be:
A. Minimum and constant
B. Zero and constant
C. Maximum and accelerating
D. Constant and maximum

Q.51 Ribosomes exist as separate subunits that bind together during protein synthesis. What do these sub units consist of?
A. mRNA and protein
B. mRNA and tRNA
C. rRNA and protein
D. rRNA and tRNA

Q.52 Which type of reaction takes place when starch molecules are converted into reducing sugars?
A. Condensation
B. Polymerization
C. Hydrolysis
D. Synthesis

Q.53 The diagram shows part of a polymer.



Which molecule is used to break the bond indicated by the arrow?
A. Amino acid
B. Amylase
C. Peptide
D. Water

Q.54 The most abundant carbohydrate found in muscles and liver of animals is:
A. Cellulose
B. Polysaccharides
C. Starch
D. Glycogen

Q.55 Sucrose is non-reducing due to:
A. 1, 4-Glycosidic bond between two glucose
B. 1, 2-Glycosidic bond between glucose and fructose
C. 1, 2-Glycosidic bond between two glucose
D. 1, 4-Glycosidic bond between glucose and fructose

Q.56 How many haem groups are there in one molecule of human haemoglobin?
A. 1
B. 3
C. 2
D. 4

Q.57 In aqueous medium, the most stable tertiary conformation is that in which:
A. Hydrophobic amino acids are buried inside
B. Hydrophilic amino acids are buried inside
C. Hydrophobic amino acids are on the surface
D. Only hydrophilic amino acids are present in it

Q.58 Which substance contains carbon, hydrogen, oxygen and nitrogen?
A. Collagen
B. Amylopectin
C. Glycogen
D. Triglyceride

Q.59 What will break an ionic bond between amino acids?
A. Condensation
B. Hydrolysis
C. Low temperature
D. pH change

Q.60 How many fatty acids residues are normally present in a phospholipid molecule?
A. 1
B. 2
C. 3
D. 4

Q.61 Which statement about triglycerides is correct?
A. These are made up of three fatty acids combined with glycogen
B. They are more saturated with hydrogen compared with phospholipids
C. They form bilayer in the membranes of cells
D. They have a lower ratio of oxygen to carbon compared with carbohydrates

Q.62 How many phosphodiester bonds are present in one molecule of ATP?
A. 0
B. 1
C. 2
D. 3

Q.63 An enzyme and substrate react through a specific site present in the enzyme known as:
A. Building site
B. Catalyst site
C. Active site
D. Allosteric site

Q.64 Which statement is true of all enzymes?
A. They are denatured at temperature above 60°C
B. They are inactivated at low pH values
C. They catalyze the breakdown of large molecules into smaller ones
D. They reduce the amount of energy required to start a reaction

Q.65 What is the effect of an increasing substrate concentration on the degree of inhibition of an enzyme-controlled reaction?

	Competitive inhibition	Non-competitive inhibition
A.	Decreased	Increased
B.	Decreased	No change
C.	Increased	Decreased
D.	No change	Increased

Q.66 Dipeptide means.
A. two Similar amino acids attached by peptide bond
B. two dissimilar amino acids attached by peptide
C. two similar or dissimilar amino acids attached by peptide bond
D. two Similar or dissimilar proteins attached by bond

Q.67 What is ribonucleoside.

A. ribose + nucleic acid
B. ribose + phosphate
C. ribose + nitrogen base
D. ribose + adenine

Q.68 Which of the following are linked together to form proteins.

A. phosphate
C. nitrogen base
B.sugar
D. amino acids

Q.69 In a typical nucleotide, phosphoric acid IS attached to pentose sugar at carbon number:

A. 1
B. 3
C. 2
D. 5

Q.70 Which of the following nucleotide Is not found In DNA?

A. d-AMP
B. d-UMP
C. d-GMP
D. d-CMP

Q.71 Link formed between nitrogenous base and pentose sugar Is :

A. C-C link
B. C-N link
C. C.O link
D. C-O-P link

Q.72 X-ray diffraction analysis or DNA was first carried out by:

A. Fredrick Miescher
B. Rosalind Franklin
C. Maurice Wilkins
D. James Watson

Q.73 It is the major proportion of RNA in the cell:

A. mRNA
B. tRNA
C. rRNA
D. rDNA

Q.74 There are the most important group of protein which are biologically active:

A. Ribozymes
B. hormones
C. enzymes
D. coenzymes

Q.75 A character that is applied to all co-factors for enzymes:

A. Organic
B. protein
C. inorganic
D. non-protein

Q.76 On hydrolysis nucleoside will not yield

A. Pyrimidine's
B. Pentose sugar
C. Purines
D. Phosphoric acid

Q.77 According to the induce fit model substrate induces change In

A. Enzyme function
B. enzyme structure
C. Enzyme activity
D. Enzyme composition

Q.78 Fats are solid due to presence of.

A. saturated fatty acids .
B. Glycerols
C. Unsaturated fatty acid
D. ester

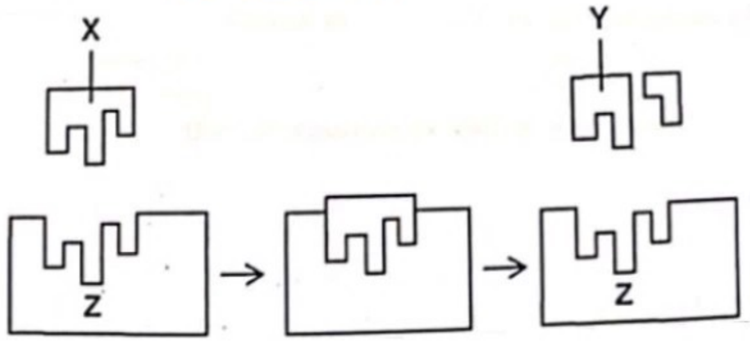
Q.79 Phosphodiester. bond is present in.

A. ATP
B. cAMP
C. ADP
D. None

Q.80 Which of the following is not found in plant.

A. sucrose
B. lactose
C. glucose
D. fructose

Q.81 The diagram represents a model of enzyme action.



Option	X	Y	Z
A.	Enzyme	Product	Subtract
B.	Enzyme	Subtract	Product
C.	Subtract	Enzyme	Product
D.	Subtract	Product	Enzyme

Q.82 The number of carbon atoms in monosaccharide vary from.

A. 3 to 6
B. 3 to 7
C. 2 to 7
D. 3 to 5

Q.83 In a polysaccharide chain like glycogen the right end is called reducing end since.

A. –CHO group is engaged in glyosidic linkage

B. –CHO group is free

C. –CH_3 group is engaged in glyosidic linkage

D. –CH_3 group may free

Q.84 Inhibitors have structural similarity with substrate:

A. Irreversible

B. Competitive

C. non-competitive

D. All of the above

Q.85 One which help enzyme and is an organic non protein

A. Activator

B. Co enzyme

C. Cofactor

D. none of these

Q.86 Which of the following is a coenzyme?

A. NAD

B. NADP

C. FAD

D. All of above

Q.87 At a temperature below the freezing point of an enzyme is

A. Unaffected

B. Slightly in activated

C. Inactivated

D. Killed

Q.88 The most important property of an enzyme is its

A. Composition

B. Thermal denaturation

C. Solubility

D. Specificity

Q.89 Enzyme inhibition caused by a substrate analog is

A. Competitive

B. In competitive

C. Noncompetitive

D. Semi-competitive

Q.90 The smallest R group in any amino acid is :

A. S

B. H

C. NH_2

D. CH_3

Q.91 In the DNA molecule.

A. The total amount of purine nucleotides and pyrimidine nucleotides is not always equal

B. There are two strands which run parallel in the 5' — 3' direction

C. The proportion of adenine in relation to thymine varies with the organism

D. There are two strands which run antiparallel one 5' — 3' direction and other in 3' — 5'

Q.92 Which one of the following is correct sequence of carbohydrates in increasing order of complexity of chemical structure.

A. oligosaccharides triose starch sucrose maltose

B. sucrose starch oligosaccharides maltose trioses

C. triose glucose maltose oligosaccharide starch

D. triose glucose maltose oligosaccharide starch

Q.93 Each beta chain of a hemoglobin molecule contains:

A. 21 amino acids

B. 141 amino acids

C. 30 amino acids

D. 146 amino acids

Q.94 Enzyme B requires Zna^{2+} in order to catalyze the conversion of substrate X. The zinc is best identified as a (n):

A. Coenzyme

B. Substrate

C. Cofactor

D. Product

Q.95 What about enzymes is wrong?

A. Thermo labile

B. Catalysts

C. Proteins in nature

D. None of these

Q.96 Which will cause the broken down of substrate?

A. Enzyme substrate complex

B. Enzyme + Optimum pH

C. Enzymes+ substrate + water

D. Enzyme + Optimum pH & Temperature

Q.97 The pair of nitrogen base in DNA is conjugated with.

A. disulphide bond

B. peptide bond

C. hydrogen bond

D. glyosidic bond

Q.98 Which one of the following pairs is

A. triose sugar — glyceraldehydes — aldo sugar

C. pentose sugar — ribulose — keto sugar

B. hexoses sugar — fructose —aldo sugar —

D. trisoe sugar — dihydroxy acetose - keto sugar

Q.99 Which one of the following pairs is matched.

A. galactose - lactose

B. fructose - galactose

C. fructose - glucose

D. ribose – Deoxyribose

SKN

Q.100 The function or tRNA is:
A. To carry genetic information's from DNA to
B. To synthesize protein
C. Pick up amino acids and transfer them to
D. Constitute ribosomes

Q.101 Glucose + Fructose → Sucrose H_2O
A. Hydrolysis
B. Denaturation
C. Condensation
D. Incorporation synthesis

Q.102 Distance between twist of DNA molecule is:
A. 31 A"
B. 34 A"
C. 24 A"
D. 44 A"

Q.103 Extreme changes in pH cause denaturation of enzyme by breaking :
A. bond
B. ionic bond
C. hydrogen
D. ester

Q.104 Fatty acids are found in all of the following except:
A. Acylglycerols
B. waxes
C. phospholipids
D. terpenoids

Q.105 Variability among different types of Acylglycerols is due to :
A. glycerol's
B. ketones
C. fatty acids
D. isoprenoid

Q.106 It is not a component of phosphatidic acid:
A. glycerol
B. phosphoric acid
C. fatty acid
D. base

Q.107 A-helix __________ amino acids in each turn of the helix:
A. 3.0
B. 3. 6
C. 3.5
D. 3.8

Q.108 Silk is chemically:
A. Lipid
B. Protein
C. wax
D. Carbohydrate

Q.109 Pick the odd one
A. Maltose
B. Cellulose
C. Sucrose
D. Lactose

Q.110 The RNA transporting-amino acid to the protein synthesizing site known as.
A. t-RNA
B. m-RNA
C. r-RNA
D. any one of a.b,c

Q.111 Which the following pair regarding to biological importance of carbohydrates is not correct match.
A. Cellulose — forms the plant cell wall
B. Glycogen— reserve food in animals
C. Ribose sugar — structural components of ATP
D. Galactose — the most widely used in respiration

Q.112 Find out the miss matched pairs.
A. Protein — important compounds of nucleus
B. Nucleic acid — major components Of chromosomes
C. Amino acid — an amphoteric Compound
D. Enzymes — colloidal catalysts

Q.113 Two amino acids are attached due to:
A. Disulphide bonds
B. Hydrogen bond
C. Glycosidic bond
D. Peptide bond

Q.114 Phosphoric acid has the ability to develop________ with OH group Of pentose sugar
A. Hydrogen bond
B. Covalent bond
C. Ester linkage
D. None of these

Q.115 NAD is an important:
A. Enzyme
B. Coenzyme
C. Hormone
D. Vitamin

Q.116 An amino acid has a minimum of _______ carbon atoms and______ nitrogen atom;
A. 1 & 2
B. 2 & 2
C. 2 & 1
D. 1 & 1A

Q.117 Segment of DNA has 120 adenine and 120 cytosine bases. The total number of nucleotides present in the segment is
A. 120
B. 200
C. 240
D. 480

Q.118 The bond formed between glucose and fructose to from sucrose is
A. 1, 4 Glycosidic bond
B. 1, 2 Glycosidic bond
C. 1, 6 Glycosidic bond
D. 1, 3 Glycosidic bond

SKN

Q.119 The sugar Component of DNA molecule has an empirical formula:
A. $C_5H_{10}O_4$
B. $C_4H_{10}O_5$
C. $C_5H_{10}O_5$
D. $C_6H_{12}O_6$

Q.120 In glycogen, which kind or linkage is found between adjacent glucose molecules?
A. 1, 4
B. 1, 6
C. 1, 4 and 1, 6
D. 1, 2 and 1-4

Q.121 Which of following is an example of phospholipid?
A. Palmitic acid
B. Arachidonic acid
C. Lecithin
D. Glycerol

Q.122 Which of the following is incorrect about lipids?
A. On basis of single and double bonds they are divided into fats and oils
B. Neural tissues are made up of neutral fats only
C. Phospholipids are never form part of cell membrane
D. Lipids store more •energy then proteins

Q.123 Solubility, high heat of vaporization and high heat capacity of water in due to?
A. Its polar nature
B. Its covalent bonds
C. Its ionic nature
D. Polar and ionic nature

Q.124 Not true for co-factor of enzyme
A. Serve as bridge
B. Provide source of chemical energy
C. Is non protein
D. React with substrate

Q.125 In which of the following groups, all are polysaccharides?
A. Glycogen, sucrose, maltose
B. Glycogen, cellulose, starch
C. Sucrose, glucose, fructose
D. Maltose, lactose, fructose

Q.126 The following molecule represents a Simplest sugar
A. Fructose
B. Sucrose
C. Ager
D. G3P

Q.127 The distinctive characteristic and functional groups of fats is
A. Ketone
B. Alcohol
C. Peptide
D. Ester

Q.128 Vegetable oils are
A. Sodium salts of higher fatty acids
B. Mixture of sodium and potassium salts of higher fatty acids
C. Potassium salts of higher fatty acids
D. Glycerides of fatty acids

Q.129 Each fat molecule is formed from
A. Three glycerol molecules and three fatty acid molecules
B. One glycerol molecule and one fatty acid molecule
C. One glycerol molecule and three fatty acid molecule
D. Three glycerol molecules and One fatty acid molecule

Q.130 A protein rich in lysine and arginine behave as
A. Acidic protein
B. Neutral protein
C. Basic Protein
D. Buffer protein

Q.131 Plants synthesize proteins from
A. Sugars
B. Fatty acids
C. Amino acids
D. Phospholipids

Q.132 The primary structure of a protein is maintained due to
A. Glycosidic bonds
B. Hydrogen bonds
C. S-S linkage
D. Peptide bonds

Q.133 The number of different amino acids discovered yet
A. 26
B. 20
C. 170
D. 270

Q.134 Which Of the following is a type of dinucleotide?
A. DNA
B. RNA
C. ADP
D. NAD

Q.135 Which of the following sequence is correct on the basis of increasing molecular weight?
A. DNA, ATP, NADP, AMP
B. AMP, ADP, NADP, DNA
C. ATP, AMP, DNA, NADP
D. ATP, ADP, NADP, DNA

Q.136 These are polyhydroxy aldehydes or ketones:
A. Carbohydrates
B. Lipids
C. Proteins
D. Nucleic acids

Q.137 These are the primary products of photosynthesis:
A. Carbohydrates
B. Lipids
C. Proteins
D. Nucleic acids

Q.138 Cotton is pure form of:

A. Starch
B. Cellulose
C. Fibrous protein
D. Silk fiber

Q.139 Fatty acids found in acylglycerols in animals are commonly:

A. Straight chains
B. Branched chains
C. Ringed
D. All A, B, C

Q.140 Classification of amino acids into different groups depends upon:

A. Amino group
B. Carboxyl group
C. Alpha carbon
D. Alkyl group

Q.141 Scale model of DNA was built by:

A. Frederick Miescher
B. Erwin Chargaff
C. James D. Watson
D. Maurice Wilkins

Q.142 Genetic message for the formation of a particular protein resides at:

A. mRNA
B. tRNA
C. rRNA
D. All A, B, C

Q.143 A statement that is not true for enzymes:

A. Increase rate of reaction
B. Affect nature of end products
C. Required in small amounts
D. Sensitive to environment

Q.144 At unlimited substrate concentration, rate of reaction depends directly upon:

A. Substrate
B. Enzyme
C. Product
D. Intermediate

Q.145 Slight change in optimum pH can affect enzyme activity due to:

A. Destruction of globular structure
B. Denaturation of enzyme structure
C. Effect on ionic state of active site
D. Breakdown of hydrogen bonds

Q.146 An enzyme that works in liver at very high pH:

A. Pepsin
B. Chymotrypsin
C. Lipase
D. Arginase

Q.147 An enzyme inhibitor is a chemical substance that:

A. Attaches substrate with enzyme
B. Transforms substrate into product
C. Blocks active site of enzyme
D. Activates catalytic site of enzyme

Q.148 Which one will be at tertiary structural level?

A. Haemoglobin
B. Fibrin
C. Myoglobin
D. Keratin

Q.149 General formula for monosaccharides can best be expressed as:

A. $C_x(H2O)_y$
B. $C_n(H_2O)_n$
C. $CH_2O)_n$
D. $C(H_2O)_{n-1}$

Q.150 Number of ester bonds in a trinucleotide:

A. 1
B. 2
C. 3
D. 5

Q.151 Presence of which type of bond shows more complexity among carbohydrates?

A. 1-2 glycosidic linkage
B. 1-6 glycosidic linkage
C. 1-4 glycosidic linkage
D. 1-3 glycosidic linkage

Q.152 Which of the following does not contain carbohydrates?

A. Pectin
B. Dextrin
C. Cutin
D. Chitin

Q.153 Which one is not a nitrogenous busc?

A. Adenine
B. Lecithin
C. Ethanolamine
D. Choline

Q.154 Which substance contains carbon, hydrogen, oxygen and nitrogen?

A. Collagen
B. Glycogen
C. Amylopectin
D. Triglyceride

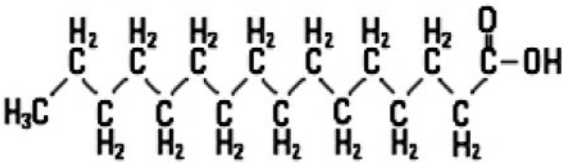
Q.155 What is the effect of an increasing substrate concentration on the degree of inhibition of an enzyme-controlled reaction?

	Competitive inhibition	**Non-competitive inhibition**
A.	Decreased	Increased
B.	Decreased	No change
C.	Increased	Decreased
D.	No change	Increased

Q.156 Formation of trisaccharide involves release of______________ water molecules.

A. 2
B. 3
C. 1
D. 4

Q.157 Given below is the formula of:



A. Palmitic acid
B. Oleic acid
C. Acetic acid
D. Butyric acid

Q.158 A triglyceride molecule has:

A. Three fatty acids with two glycerol mplecules
B. Three fatty acids with one glycerol molecule
C. Two fatty acids with two glycerol molecules
D. One fatty acid with one glycerol molecule

Q.159 Starch is:

A. Monomer & micromolecule
B. Monomer & macromolecule
C. Pdlymer & micromolecule
D. Polymer & macromolecule

Q.160 Chemical reaction which correctly justifies the synthesis of cellulose is:

A. Hydrolysis
B. Decarboxylation
C. Condensation
D. Reduction

Q.161 Types of amino acids that are used to form most of the proteins:

A. 18
B. 20
C. 21
D. 25

Q.162 When an assembly of more than one globular polypeptides occurs then it is known as _____________ structure of protein.

A. Secondary
B. Primary
C. Tertiary
D. Quaternary

Q.163 Cuticle is an example of:

A. Acylglycerols
B. Phospholipids
C. waxes
D. Terpenoids

Q.164 In a molecule of DNA, nucleotide of thymine pairs with:

A. Datp
B. dAMP
C. dUTP
D. dGTP

Q.165 How many nitrogen atoms are present in adenine?

A. 3
B. 4
C. 5
D. 6

Q.166 The catalytic activity of an enzyme is restricted to a small portion of the structure known as:

A. Active site
B. Allosteric site
C. Binding site
D. Substrate site

Q.167 Most abundant organic compound in a bacterial cell is:

A. water
B. RNA
C. Protein
D. Lipid

Q.168 Water acts as temperature stabilizer in organism' due to its very high:

A. Heat of vaporization
B. Ionic properties
C. Heat capacity
D. Solubility

Q.169 Hydrolysis of which of the following will give two glucose molecules?

A. Sucrose
B. Maltose
C. Lactose
D. Mannose

Q.170 Which of the following is a non-reducing carbohydrate?

A. Maltose
B. Glucose
C. Cellulose
D. Lactose

Q.171 Most common stored fats in our body belong to which group of lipids?

A. Steroids
B. Phospholipids
C. Glycolipids
D. Acylglycerols

Q.172 Which one is used in formation of lecithin?

A. Serine
B. Ethanolamine
C. Choline
D. Adenine

Q.173 Which group of amino acid is involved in formation of peptide linkage with other amino acid?

A. CH_3
B. Alpha - Carbon
C. Amino group
D. R-group

Q.174 Which type of bond cannot be found in tertiary structure of a protein?

A. Peptide bond
B. Ionic bond
C. H-bond
D. Ester bond

SKN

Q.175 Which amino acid is involved in formation of disulphide bridges?
A. Serine
B. Cysteine
C. Arginine
D. Methionine

Q.176 Most abundant type of RNA in cytoplasm is:
A. rRNA
B. tRNA
C. mRNA
D. rDNA

Q.177 Which is mainly responsible for the movement of chromosomes during anaphase of cell division?
A. RNA
B. Lipids
C. Proteins
D. DNA

Q.178 What is the Common character in fructose and dihydroxyacetone?
A. Aldehyde group
B. Ketonic group
C. Number of carbons
D. Number of OH groups

Q.179 Active site of enzyme is made up of:
A. Few amino acids
B. Co-factors
C. Bulk of amino acids
D. Bulk of amino acids and co-factor

Q.180 What is objection on lock and key model of enzyme action?
A. Active site has different charges
B. Active site shape is rigid
C. Active site shape is flexible
D. Binding site is not a separate site

Q.181 Salivary amylase can digest starch optimally at:
A. Slightly acidic pH
B. Highly basic pH
C. Highly acidic pH
D. Slightly basic pH

Q.182 Which one of the following are found rarely in nature, and occur in some bacteria?
A. Hexoses
B. Pentoses
C. Trioses
D. Tetroses

Q.183 The main source of carbohydrates for animals is:
A. Starch
B. Chitin
C. Glycogen
D. Cellulose

Q.184 How many carbon atoms contribute to form a pyran ring of glucose?
A. 7
B. 6
C. 5
D. 4

Q.185 Lipids store high amount of energy because of higher proportion of:
A. C - H bond
B. C -C bond
C. C-N bond
D. C-O bond

Q.186 Phospholipids are derivatives of phosphatidic acid. Phosphatidic acid contains all of the following except:
A. Glycerol
B. Phosphoric acid
C. Fatty acid
D. Nitrogenous base

Q.187 Lipids are usually non-polymers. The only polymers found in lipids are included in:
A. Acylglycerols
B. Phospholipids
C. Waxes
D. Terpenoids

Q.188 Keratin is a protein of:
A. Muscles
B. Spindles
C. Hairs
D. Blood

Q.189 The compound formed by combination of a base and a pentose sugar is called:
A. Ester
B. Nucleotide
C. Nucleoside
D. Phospholipid

Q.190 All of the following are true for both DNA and RNA except:
A. Contain pentose sugar, nitrogenous base and phosphoric acid
B. Are nucleic acids and formed by condensation of nucleotides
C. Each containing four different types of nitrogenous bases
D. Both are double stranded molecules of nucleic acids

Q.191 Point out the odd pair:
A. Protein, peptide bond
B. Fats, ester bond
C. Polysaccharide, glyosidic bond
D. ATP, hydrogen bond

Q.192 %age of ribosomal RNA out of all RNAs is:
A. 3-4%
B. 50%
C. 10-20%
D. 80%

Q.193 The biologically active proteins are known as:
A. Glycoproteins
B. Activators
C. Enzymes
D. Inhibitors

Q.194 In a eukaryotic cell, most of the enzymes are:
A. Dissolved in cytoplasm
B. Attached to membrane system
C. Float in cytoplasm
D. None of these

Q.195 They check the reaction rate by occupying the active sites. or destroying the globular structure:
A. Irreversible inhibitors
B. Competitive inhibitors
C. Reversible inhibitors
D. Non-competitive inhibitors

Q.196 Number of peptide bonds in insulin :
A. 51
B. 49
C. 50
D. 48

Q.197 Insulin is a protein consisting of two polypepetide chains of amino acids held together by:
A. Peptide bonds
B. Gtycosidic bonds
C. Covalent
D. Disulphide

Q.198 Which one of the following reactions results in the conversion of amino acids to proteins
A. Condensation
B. Deamination
C. Phosphorylation
D. Transamination

Q.199 All of the following are keto sugars except
A. Ribulose
B. Glucose
C. Dihydroxyacetone
D. Fructose

Q.200 The chief form of carbohydrate stored in animals cells is
A. Glucose
B. cellulose
C. Starch
D. Myoglobin

Q.201 The main source of carbohydrates for animals is
A. Starch
B. Chitin
C. Glycogen
D. Cellulose

Q.202 Number of peptide bonds in a molecule of hemoglobin is
A. 574
B. 572
C. 573
D. 570

Q.203 How many carbon atoms contribute to form a pyran ring (glucopyranose)?
A. 7
B. 6
C. 5
D. 4

Q.204 On hydrolysis triglyceride yields:
A. A glycerol and three fatty acids
B. A fatty acid and three glycerol
C. A glucose and three fatty acids
D. A maltose and two fatty acids

Q.205 Both DNA & RNA
A. Are single standard molecules
B. Contain the same four nucleotide bases
C. Have the same five-carbon sugar
D. Contain phosphate group

Q.206 Which of the following characteristics does not apply to a structural protein such a silk?
A. Peptide bond
B. Specific secondary structure
C. Active site
D. Hydrogen bonds between separate polypeptide chains

Q.207 Which of the following is not a function of polysaccharides in organisms?
A. Storage of heredity material
B. Energy storage
C. Formation of cell walls
D. Structural support

Q.208 When a peptide is formed, which statement is correct?
A. One amino Eid loses a hydroxyl group from its amine group
B. One amino acid loses a hydroxyl group from its carboxyl group.
C. Both amino acid lose a hydrogen atom from their amine group.
D. Both amino acid lose a hydrogen atom from their group,

Q.209 When hydrolysed, which molecule have products containing a carboxyl group?
1. phospholipids
2. polysaccharides
3. Proteins
A. 1 and 2
B. 1 and 3
C. 2 and3
D. 3 only

Q.210 Which term most nearly means substrate?
A. Reactant
B. Enzymes lower
C. Activation energy
D. Active site

SKN

Q.211 Enzymes lower the _______________ of the reaction:
A. pH
B. Temperature
C. Activation energy
D. speed

Q.212 The type of inhibition in which inhibitor has no structural similarity to substrate with enzyme at other than the active site is called.
A. Irreversible inhibition
B. Competitive inhibition
C. Non-competitive and reversible inhibition
D. Reversible inhibition

Q.213 Which answer choice matches the functions listed to the correct RNA types?
I. Interprets a codon as an amino acid
II. Binds to a gene transcript
Ill. Contains information for assembling a protein
A. l. mRNA: II. rRNA; Ill tRNA
B. l. mRNA: II. tRNA; Ill, rRNA
C. l. tRNA: II. mRNA; Ill. rRNA
D. l. tRNA: II. rRNA; Ill. mRNA

Q.214 J. D. Watson and F.H. Crick utilized X-ray diffraction data purposed by:
A. Rosalind Wilkins and Maurice Franklin
B. Sutton and Boveri
C. Maurice Wilkins and Rosalind Franklin
D. None of these

Q.215 The optimum pH for sucrase is:
A. 680
B. 4.50
C. 5.50
D. 7.60

Q.216 Such cofactor that make the weak linkage with the Enzyme:
A. Reversible inhibitors
C. Activator
B. co Enzyme
D. Activator and Co Enzyme?

Q.217 It increases the Vibration of atoms violent Which up enzyme denature
A. PH
B. Inhibitors
C. Substrate cone
D. Heat

Q.218 Active site by virtue of its flexibility becomes complementary to substrate
A. Induced fit model
B. Emil Fischer's proposal
C. Lock and key model
D. Statement is wrong

Q.219 It has optimum pH of 9.0
A. Pancreatic lipase
B. Chymotrypsin
C. Arginase
D. Catalase

Q.220 Enzymes increase the rate of reaction by.
A. Increasing Temperature
C. Decreasing Activation Energy
B. Decreasing pH
D. Increasing-Activation Energy

Q.221 Which of the following combination of pair is absent in DNA?
A. A-T
B. C-G
C. A-U
D. T-A

Q.222 The inhibitors that bind tightly and to enzymes and destroy their globular Structure and catalytic activity are:
A. Reversible inhibitors
B. Irreversible inhibitors
C. Competitive inhibitors
D. Non-competitive inhibitors

Q.223 Enzyme succinate dehydrogenase converts succinate into
A. Malate
B. Malonic acid
C. Citrate
D. Fumarate

Q.224 If the detachable cofactor is an inorganic ion then it is designated as:
A. Coenzyme
B. Prosthetic group
C. Holoenzyme
D. Activator

Q.225 The cornbination of a pentose sugar with a base result in a compound is known as:
A. Nucleotide
B. Nucleoside
C. Nucleic Acid
D. Polynucleotide

Q.226 Number of base pairs in one turn of DNA is:
A. 10
B. 2
C. 34
D. 54

Q.227 Which one of the following is an example of competitive inhibitor?
A. Glucose
B. Fumarate
C. Succinic Acid
D. Melonic acid

Q.228 Which sugar is not present in plants
A. Sucrose
B. Lactose
C. Glucose
D. Fructose

SKN

Q.229 All Coenzymes are derived from
A. Proteins
B. Nucleic acids
C. Carbohydrates
D. Vitamins

Q.230 Bond b/w phosphate and sugar in anucleotide is
A. H -bond
B. Phosphodiester bond
C. Covalent bond
D. Sulphide bond

Q.231 On the surface of _____________ mRNA and tRNA interact to translate the information into from genes intro a specific proteins:
A. rRNA
B. Chrornosome
C. Ribosorne
D. Nuclesome

Q.232 Antiparallel strands of DNA molecules means
A. One strand tums anti-clock wise
B. The phosphate group of two DNA strands. at their ends share the same position
C. The phosphate group at the strands of DNA are in position (Poles)
D. One strand turns clock-wise

Q.233 The enzymes important in photosynthesis are found in:
A. Mitochondria
B. Chloroplast
C. Ribosomes
D. apparatus

Q.234 By increasing the enzyme molecules an increase in the number of _____ takes place:
A. Substrate molecules
B. Product molecules
C. Active sites
D. Inhibitor molecules

Q.235 Following are the properties of enzyme EXCEPT:
A. Enzymes are globular proteins
B. Not used up in chemical reactions
C. Have no effect on the nature of end
D. the activation energy of reactants

Q.236 A detachable organic co-factor is called:
A. Prosthetic group
B. Activator
C. Co-enzyme
D. Apenzyme

Q.237 Both of them can used again and again:
A. Hormones & Antibodies
B. Enzymes & Co-enzymes
C. Enzymes & substrates
D. Substrates & Products

Q.238 All three types of _________ are synthesized from ___________ in the ___________
A. RNA DNA. Nucleus
B. RNA Nucleus. DNA
C. DNA RNA Nucleus
D. Nucleus. RNA DNA

Q.239 This type of RNA consists of a single strand of variable length:
A. Messenger RNA
C. Transfer RNA
B. Ribosomal RNA
D. snRNA

Q.240 Small amount of an enzyme can accelerate chemical reactions means enzymes are ________ in their action:
A. Specific
B. Non-specific
C. Efficient
D. Accurate

Q.241 In a feedback mechanism, the final product _____________ the enzyme of first step:
A. inhibits
B. Stimulates
C. Activates
D. Regulates

Q.242 If the enzyme concentration is _______ and amount of substrate is ________ a point is reached when a further increase in the substrate does not increase the rate of reaction, any more-
A. Increased, Increased
B. Increased. Decreased
C. Decreased , Increased
D. Keep constant.

Q.243 All enzymes can work at their maximum rate at a specific temperature called as:
A. Suitable temperature
B. Minimum temperature
C. Optimum temperature
D. Maximum temperature

Q.244 An enzyme with its co-enzyme or prosthetic group removed is designated as:
A. Apoenzyme
B. Co-enzyme
C. Holoenzyme
D. Co-factor

Q.245 Who proposed lock and key model to visualize substrate and enzyme action:
A. Koshland
B. Emil Fischer
C. Edward Bucher
D. J. B Sumner

Q.246 Is a chemical substance which can react in place of substrate, with enzyme, but is not transformed into
A. Cyanide
B. Inhibitor
C. Antibodies
D. Antimetabolites

SKN

Q.247 The role of enzyme controlled reaction may increase with increase in temperature
A. up to a certain limit
C. up to minimum level
B. up to maximum level
D. up to infinite level

Q.248 At high substrate level, further increase in the substrate does not increase the reaction rate because:
A. There is no enzyme
B. All the active sites of the enzyme are
C. There is no active site
D. All the active Sites of the enzyme are free

Q.249 Maximum amount of DNA occurs inside the nucleus , however a small amount of DNA is always located outside the nucleus in:
A. Mitochondria
B. Chloroplast
C. Plasmids
D. Mitochondria and Chloroplast

Q.250 The factor that affect the rate of enzyme catalysis actually effect ___________ and _________ of enzyme:
A. Chemistry, Shape
B. PH and Temperature
C. Ionization and temerature
D. energy and Temperature

Q.251 In nucleic acids adenine can make a base pair with:
A. Guanine
B. Thymine
C. Uracil
D. Thymine or Uracil

Q.252 A DNA sample having 34% Will have what percentage of cytosine:
A. 16%
B. 32%
C. 34%
D. 68%

Q.253 Pepsin is a powerful_________ digestive enzyme
A. Carbohydrates
B. Proteins
C. Lipids
D. Nucleic acid

Q.254 Because of the structural similarity with the substrate they may be selected temporarily by the binding sites, but are not able to activate me catalytic sites:
A. Irreversible it inhibitors
B. Reversible inhibitors
C. Competitive inhibitors
D. Non-Competitive inhibitors

Q.255 The structure of the glucose and galactose are same except with regards to
A. 1st Carbon
B. 3rd Carbon
C. 2nd Carbon
D. 4th Carbon

Q.256 Enzyme are different from inorganic catalyst
A. Not being used up in reactions
B. Being proteinases in nature
C. Having high diffusion rate
D. Working at high temperature

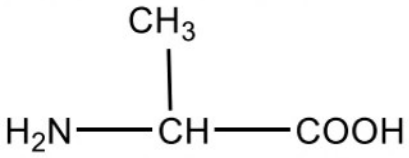
Q.257 Glycerol is the back bone molecule for
A. Waxes
B. Triglycerides
C. Phospholipid
D. All of these

Q.258 A fatty acid is saturated if it
A. All internal carbon atoms in fatty acid chain contain at least two hydrogen
B. Contains Single bond between carbon
C. Contain double bond between carbon
D. A and B

Q.259 Which of the following is mixture of compounds?
A. Acylglycerols
B. phospholipids
C. waxes
D. Terpenoids

Q.260 Phospholipids are derivatives of Phosphatidic acid. Phospholipids acid contains all of following except
A. glycerol
B. phosphoric Eid
C. fatty acid
D. Nitrogenous base

Q.261 This amino acid is called



$H_2N-\overset{\overset{\displaystyle CH_3}{|}}{CH}-COOH$

A. Leucine
B. Alanine
C. Glycine
D. Arginine

Q.262 Each of the 20 naturally occuring amino acids has a different
A. NH_2 group
B. R Group
C. — COOH group
D. — OH group

Q.263 Which class of molecule is the major component of cell
A. Phospholipid C. cellulose
B. wax D. Triglyceride

Q.264 The two pyrimidine bases most commonly found in DNA are:
A. Uracil and thymine B. Cytosine and thymine
C. Cytosine and uracil D. Cytosine and Guanine

Q.265 Deoxyribonucleic acid, adenosine triphosphate and ribonucleic acid do not contain:
A. Bases B. pentose
C. nucleotides D. Peptides

Q.266 What is the advantage of DNA having wo complementary strands?
A. Pairing can occur between chromatids
B. Transcription and replication can occur simultaneously
C. Semi — conservative replication is possible
D. Diploid cells can inherit DNA from both parents

Q.267 Which of the following statements about strands of a newly replicated DNA molecule is
A. Both strands are made up of newly assembled nucleotides
B. One strand is new and the other is part of the original molecules
C. Both strands contain some nucleotides from the original molecules
D. The sugar — phosphate chains are and new bases are inserted between them

Q.268 Which statement describe base in nucleic acids?
A. Adenine cannot pair with either uracil or
B. Guanine is paired adenine
C. Hydrogen bonding can only occur between pyrimidine bases
D. Purine bases can only pair ,with pyrimdine

Q.269 What is the function of the enzyme DNA polymerase?
A. To build a strand of DNA using DNA as a ten-gate
B. To build a strand of DNA using a polypeptide as a template
C. To build a strand of mRNA using DNA as a template
D. To build a polypeptide using mRNA as a template

Q.270 Glyosidic seen in Lactose
A. Alpha 1-4 linkage B. Alpha 1-6 linkage
C. Beta 1-4 linkage D. Alpha 1-2 linkage

Q.271 What is the effect of the enzyme DNA ligase?
B. DNA replication D. DNA transcription occurs

Q.272 Which of the following statement about the structure of DNA is incorrect?
A. one complete turn requires 3.4 10 nm and 10 bases pairs
B. The backbones of each strand run in opposite directions relative to each other
C. Each pair of nucleotides is held together by three hydrogen bonds
D. The width of the molecule is a constant 2 nm

Q.273 An mRNA is 336 nucleotides long. including the inhibitor and termination codons The number of amino acids in the protein translated from this mRNA is
A. 10 B. 111
C. 112 D. 330

Q.274 Phosphodiester bond is formed between
A. Two Phosphate Group
B. One Phosphate & Two Hydroxyl Group
C. Two Phosphate & one Hydroxyl Group
D. Two Phosphate & Two Hydroxyl Group

Q.275 Proteins consist of definable sequences of amino acids arranged in a certain definite order. This was suggested for the first tinw by
A. PA Levene B. F. Miescher
C. F. Sanger D vernnon ingram

Q.276 The Inhibition caused by the competitive Inhibitor can be overcome by:
A. Increasing temperature of reaction
B. Decreasing temperature of reaction
C. Increasing concentration of substrate
D. Decreasing concentration of substrate

Q.277 Large RNA molecule displays more conformational changes than DNA double helices because ____________.
A. Presence of triplex region
B. Occurrence of single stranded regions
C. Presence of unusual modified bases
D. Presence of ribose Sugars

Q.278 Pick up pyrimidine from following.
A. Adenine
B. Cytocine
C. Guanine
D. All are pyrimidine

Q.279 Which of following is Incorrect absent Monosaccharides?
A. C-5
B. C-9
C. C-6
D. All are correct

Q.280 What kind of glycosidic linkage is found In sucrose?
A. 1, 6
B. 1, 4
C. 2, 6
D. 1, 2

Q.281 Which one of the following molecules has the lowest molecular weight?
A. Sucrose
B. Lactose
C. Glucose
D. Cellulose

Q.282 Which of the following has the greatest number of glycosidic bonds?
A. Glucose
B. DNA
C. Amylose
D. Vitamin A

Q.283 The amount of DNA in picogram in kindly cells of chicken are:
A. 2.3
B. 2.4
C. 3.3
D. 1.3

Q.284 Choline contains how many carbon and nitrogen atoms
A. 4-1
B. 3-1
C. 5-1
D. 4-2

Q.285 A peptide chain attains secondary structures through the formation of___________
A. Ionic bonds
B. Hydrogen bonds
C. Di-sulfide bond
D. Peptide bond

Q.286 Amylopectin is soluble in
A. Hot water
B. Cold water
C. Soluble in both
D. Cold & Hot water

Q.287 Human cell amount of thymine 29% what would be the age of Guanine in cell:
A. 30
B. 29
C. 20
D. 23

Q.288 Pick up Globular protein which is defensive for body:
A. Enzymes
B. Hormones
C. Antibodies
D. All of these

Q.289 An example of a saturated fatty acid is___________
A. Palmitic acid
B. Oleic acid
C. Acetic Acid
D. Butaric Acid

Q.290 Proteins of hair, horns, feathers and other skin appendages is__________
A. Storage protein
B. Enzymatic protein
C. Structural protein
D. Hormonal protein

Q.291 The two chains of Insulin are held together by_____________ ?
A. Covalent bond
B. Ionic bond
C. Hydrogen bond
D. Di-sulfide bridges

Q.292 Cholesterol is the basis of___________.
A. Starch
B. Carbohydrate
C. Protein
D. Steroids

Q.293 No of Atoms In Hemoglobin are:
A. 574
B. 9517
C. 9512
D. 57491

Q.294 Which form head in phospholipids?
A. Fatty acids
B. Glycerol
C. Phosphoric acid
D. Phosphoric acid and nitrogen group

Q.295 Percentage of lipoprotein in bacterial cell is:
A. 15
B. 22
C. 3
D. 18

Q.296 For the synthesis of 1gm of glucose solar energy required is:
A. 71.76 Kcal
B. 7177.0 Kcal
C. 717.6 Kcal
D. 717600 Kcal

Q.297 One of the following chemical bonds is not involved in the folding of protein:
A. Hydrogen bonds
B. Hydrophobic bonds
C. Peptide bonds
D. Ionic bonds

Q.298 Which is an aldo sugar?
A. Dihydroxyacetone
B. Glyceraldehyde
C. Fructose
D. Ribulose

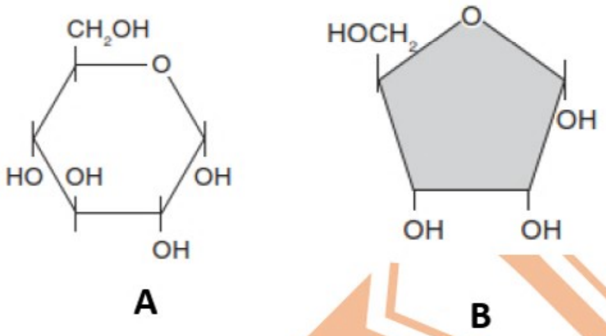
SKN

Q.299 Which of the following enzyme is non — protein in nature?
A. Ribozyme
B. Lipase
C. Amylase
D. Sucrase

Q.300 If an enzyme solution is saturated with substrate, the most effective way to obtain an even faster yield of products would be:
A. Add more of the enzymes
B. Add an allosteric inhibitor
C. Add more substrate
D. Add a non-competitive inhibitor

Q.301 The function of competitive inhibitors is defined by their ability to interact or bind to_______.
A. The active site of an enzyme
C. Non-competitive inhibitor
B. Regulatory sub-units of an enzyme
D. Enzyme cofactors

Q.302 Which of the following options correctly identifies the structural formulae shown in figure?



A. A — Fructose, B — Ribose
B. A — Glucose, B — Deoxyribose
C. A — Glucose B — Ribose
D. A — Glucose B — Fructose

Q.303 The detachable cofactor if it is an inorganic ion is called ______.
A. Activator
B. Coenzyme
C. Prosthetic group
D. All of these

Q.304 Chymotrypsin has optimum PH
A. 7.60
B. 5.50
C. 6.80
D. 7.00 - 8.00

Q.305 Which of the following is covalently bounded cofactor?
A. Prosthetic group
B. ATP
C. NADP
D. Mg^{2+}

Q.306 Which of the following is most unstable?
A. Product
B. Substrate
C. Enzyme-substrate complex
D. None of these

Q.307 An Inhibitor that Changes the overall Shape and chemistry of an enzyme is known
A. Anti-steric inhibitor
B. Non- Steric inhibitor
C. Competitive inhibitor
D. Non-competitive inhibitor

Q.308 At high temperature the rate of enzyme action decreases because the Increased heat:
A. Changes the pH of the system
B. Neutralize acids and bases in the system
C. Alters the active site of the enzyme
D. Increases the concentration of enzymes,

Q.309 A fatty acid is a compound made of a chain of carbon atoms and ____________.
A. An acid group at one end
B. An amino group
C. Acid group at both ends
D. Amino group at both ends

Q.310 ___________ protein has quaternary structure.
A. keratin
B. Silk
C. Hemoglobin
D. Fibrin

Q.311 Which bond provides stability to complex carbohydrates?
A. N-C
B. C-O-C
C. P-O-C
D. C-O-N

Q.312 Blood contains ————_percent of glucose.
A. 0.8 %
B. 0.08%
C. 0.06%
D. 6%

Q.313 Most common acyl glycerol is _____________.
A. Animal fats
B. Plant fats
C. Triacyclglycerol
D. Diacylglycerol

Q.314 The basic unit of nucleic acid is
A. Pentose sugar
B. Nucleoid
C. Nucleoside
D. Nucleotide

Q.315 MRNA have AUG for methionine what will be present on TRNA.
A. Atg
B. Tac
C. Tag
D. Uac

Q.316 Which of the following groups are all polysaccharides?
A. Sucrose, glucose and fructose
B. Glycogen, sucrose and maltose
C. Maltose, lactose and fructose
D. Glycogen, cellulose and starch

Q.317 Lactose is composed of________________.
A. Glucose + galactose
B. Glucose + fructose
C. Fructose + galactose
D. Glucose + glucose

Q.318 Which of the following categories includes all others in the list?
A. Monosaccharide
B. Carbohydrate
C. Disaccharide
D. Polysaccharide

Q.319 Which of following is precursor of sex hormones.
A. Carbohydrates
B. Lecithin
C. Steroid
D. All of these

Q.320 The structural level of a protein least affected by a disruption in hydrogen bonding is
A. Primary level
B. Quaternary level
C. Secondary level
D. All structural levels

Q.321 ____________ is the first microbe to have genome completely sequenced & was published in july 28,1995.
A. Streptococci Pneumonia
B. Campylobacter
C. Haemoplrilus
D. Saccharomyces

Q.322 The molecular formula for glucose is C6H12O6. What would be the molecular formula for a polymer made by linking ten glucose molecules together by dehydration reactions?
A. $C_{60}H_{120}O_{60}$
B. $C_{60}H_{100}O_{60}$
C. $C_{60}H_{111}O_{51}$
D. $C_{60}H_{102}O_{51}$

Q.323 No, of Amino acid found to be occur in cells & tissue are:
A. 20
B. 170
C. 25
D. 300 more then

Q.324 Iodine gives a red colour with:
A. Starch
B. Dextrin
C. Glycogen
D. Inulin

Q.325 Each turn of α-helix contains the amino acid residues (number):
A. 3.6
B. 3.0
C. 4.2
D. 4.5

Q.326 Nitrogen base in a phospholipid molecule attached with
A. Phosphoric
B. Butaric Acid
C. Acetic Acid
D. Palmitic Acid

Q.327 Protection against sudden thermal change is carried out by the help of:
A. Water
B. Salt
C. Ions
D. Bonds

Q.328 Percentage of water in an average brain cell is
A. 5%
B. 85%
C. 95
D. 80%

Q.329 Which property of lipids is significant for structural role of plasma membrane?
A. Hydrophilic
B. Hydrophobic
C. Catenation
D. Conjugation

Q.330 A bacterial cell contains ___________ of water
A. 60%
B. 70%
C. 80%
D. 90%

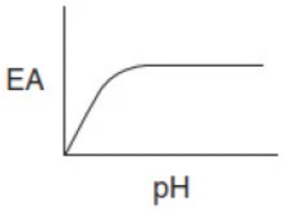
Q.331 Two molecules belonging to different categories and combine with each other?
A. Macromolecules
B. Heteromolecules
C. Conjugated molecules
D. None

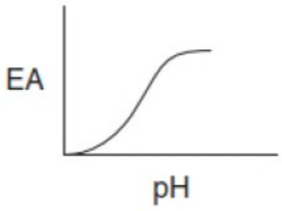
Q.332 The discovery about the presence of equal amount of adenine and thymine, also guanine and cytosine in DNA was elucidated by:
A. Erwin Chargaff
B. Fred Sanger
C. James Watson
D. Francis crick

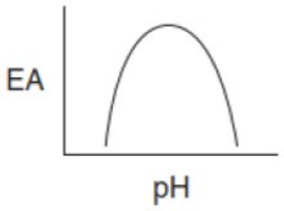
Q.333 Which makes the protein active and globular I Which structure provides specific shape and function to the protein?
A. Primary structure
B. Secondary structure
C. Tertiary structure
D. Sulphide bonds and peptide bonds

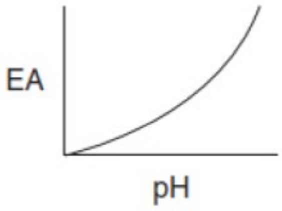
Q.334 Which of following used X-Rays diffraction of DNA
A. Erwin Charga B. Maurice Wllkins
C. James D-Watson D. Francis Crick

Q.335 Which one of the graphs shows the effect of pH on the enzymatic activity (EA.?

(a)


(b)


(c)


(d)


Q.336 Root tubers are rich source of:
A. Carbohydrates B. Lipids
C. Proteins D. Vitamins

Q.337 Primary source of energy in any cell is:
A. Monosaccharides B. Polysaccharides
C. Oligosaccharides D. Polypeptides

Q.338 Carbohydrates are the main constituent of cell wall in:
A. Plants B. Fungi
C. Algae D. All A, B, C

Q.339 The reduction of the contact area between water and hydrophobic substances which are placed in water is termed as:
A. Cohesion B. High polarity
C. Adhesion D. Hydrophobic exclusion

Q.340 In general formula of carbohydrates, 'x' and 'y' are whole numbers which are same in:
A. Glucose B. Maltose
C. Sucrose D. Starch

Q.341 Minimum number of carbon atoms that can be found in any carbohydrate is:
A.6 B. 3
C. 2 D. More than 10

Q.342 Glycolipids and glycoproteins are found in all except:
A. Extracellular matrix of animals B. Biological membranes
C. Bacterial cell wall D. Plant cell wall

Q.343 Carbohydrates are complex substances which on hydrolysis yield polyhydroxy aldehyde or ketone subunits. This definition is not applicable to:
A. Monosaccharides B. Polysaccharides
C. Oligosaccharides D. Disaccharides

Q.344 The carbon without hydroxyl group in straight chain of fructose is:
A. Carbon 2 B. Carbon 5
C. Carbon 3 D. Carbon 6

Q.345 1,4 glycosidic linkage is found in all of the following except:
A. Sucrose B. Lactose
C. Maltose D. Amylopectin

Q.346 Cellulose cannot be digested by amylase of human digestive tract because:
A. It contain 1,4-glyosidic linkages B. It is unbranched
C. It is insoluble in water D. It contains β-glucose

Q.347 These are heterogeneous group of compounds related to fatty acids:
A. Carbohydrates B. Lipids
C. Proteins D. Nucleic acids

Q.348 Acylglycerols like fats and oils are esters formed by condensation reaction between:
A. Fatty acids and water B. Fatty acids and alcohol
C. Fatty acids and glucose D. Fatty acids and phosphates

Q.349 All of the following functions are related to lipids except:
A. Components of cellular membranes B. Insulation against cold
C. Immediate source of energy D. Protection from water loss

Q.350 It acts as water barrier on surface of leaves.
A. Cutin B. Carotenoids
C. Triglyceride D. Phosphatidylcholine

SKN

Q.351 Waxes contain all of the following except:
A. Nitrogenous base B. Fatty acid
C. Alkane D. Alcohol

Q.352 It is an example of macromolecule:
A. Water B. ATP
C. Amino acid D. mRNA

Q.353 Most abundant type of lipid in plant, animal and bacterial plasma membrane is:
A. Phospholipid B. Steroid
C. Terpenoids D. Sphingolipids

Q.354 All of the following are features of oils except:
A. Unsaturated fatty acids B. Mostly obtained from plants
C. Liquid at room temperature D. Can be crystallized

Q.355 Terpenoids are made of:
A. Fatty acids B. Isoprenoid units
C. Amino acids D. Nucleotides

Q.356 All proteins contain all of the following elements essentially except:
A. Hydrogen B. Oxygen
C. Nitrogen D. Sulphur

Q.357 Most of the proteins are made of:
A. 20 types of amino acids B. 25 types of amino acids
C. 45 types of amino acids D. 64 types of amino acids

Q.358 All the amino acids have all of the following except:
A. $-NH_2$ B. –COOH
C. H D. $-CH_3$

Q.359 Smallest amino acid in nature is:
A. Valine B. Histidine
C. Glycine D. Alanine

Q.360 All of the following are true about globular proteins except:
A. Spherical B. Soluble in aqueous media
C. Inelastic D. More stable

Q.361 These are reactive parts of amino acids involved in condensation reactions:
A. Alpha carbon & Hydrogen B. Amino & Carboxyl groups
C. Carboxyl group & R group D. Only R group

Q.362 It is an example of fibrous protein:
A. Haemoglobin B. Pepsin
C. Keratin D. Albumin

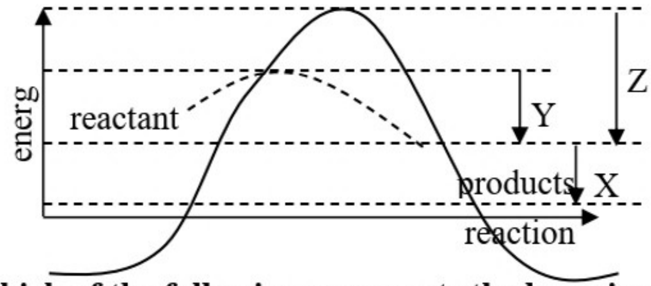
Q.363 Formation of a phosphodiester linkage involves:
A. Hydrolysis B. Dehydration synthesis
C. Hydrogen bonding D. Oxidation

Q.364 The amount of DNA is fixed for a particular species, as it depends upon:
A. Number of genes B. Amount of RNA
C. Number of chromosomes D. Size of cell

Q.365 Secondary structure of DNA duplex is maintained by:
A. Phosphodiester linkage B. Hydrogen bond
C. Ionic bond D. Hyperphobic interaction

Q.366 In a living cell, reactions without enzymes would:
A. Stop B. Speed up
C. Slow down D. Occur at normal pace

Q.367 The diagram illustrates energy changes in an enzyme-controlled reaction.



Which of the following represents the lowering of the activation energy?
A. X B. X+Y
C. Y-Z D. Z-Y

Q.368 The charge and shape of the active site is formed by:
A. Cofactor B. Amino acids
C. Allosteric site D. Globular shape

SKN

Q.369 All the enzyme active sites are occupied when:
A. Enzyme concentration is high
B. Substrate concentration is high
C. Temperature is high
D. pH is high

Q.370 It works in highly alkaline medium:
A. Catalase
B. Chymotrypsin
C. Pancreatic lipase
D. Arginase

Q.371 All of the following enzymes work in acidic environment except:
A. Pepsin
B. Sucrase
C. Enterokinase
D. Pancreatic lipase

Q.372 They occupy the active sites by forming covalent bonds or they may physically block the active sites, permanently
A. Irreversible inhibitors
B. Reversible inhibitors
C. Competitive inhibitors
D. Non-competitive inhibitors

Q.373 Heat accelerates chemical reactions because it:
A. Provides activation energy
B. Supplies kinetic energy to reacting molecules
C. Increases chances of collisions between reactant molecules
D. All A, B, C

Q.374 Enzymes are essential in our body because they:
A. Provide energy for metabolism
B. Catalyze biochemical reactions in cell
C. Are structural components of the body
D. Coordinate nervous activities of body

Q.375 At low temperature enzymes are:
A. Degraded
B. Inactivated
C. Denatured
D. Highly effective

Q.376 Which form of carbohydrate is found in RNA?
A. Aldo pentose
B. Keto pentose
C. Aldo hexose
D. Keto hexose

Q.377 Histones are linked to______________ of DNA:
A. Nitrogenous base
B. Phosphate
C. Ribose
D. Deoxyribose

Q.378 Which one of the following is not an amino acid?
A. Choline
B. Alanine
C. Arginine
D. Glutamic acid

Q.379 Which of the following is a nucleoside?
A. cAMP
B. Adenosine
C. Adenine
D. ATP

Q.380 Which of the following would be least affected when a protein is denatured?
A. Primary structure
B. Tertiary structure
C. Secondary structure
D. Quaternary structure

Q.381 It is correct for biomolecules.
A. DNA is a polymer of ribonucleotides
B. All carbohydrates are broken down into glucose
C. Sequence of amino acids determines primary structure
D. RNA is single stranded and contains different purine bases other than in DNA

Q.382 What is the most important property of water for which it is needed in the body?
A. It exists in three physical states
B. It acts as universal solvent
C. It is tasteless and odorless
D. It is made up of hydrogen and oxygen

Q.383 Which of the following yields twice as many calories per gram as carbohydrates?
A. Fats
B. Proteins
C. Minerals
D. Vitamins

Q.384 Murein present in bacterial cell wall is an example of:
A. Macromolecules
B. Conjugated molecules
C. Micro-molecules
D. Organic molecules

Q.385 It is the major portion of RNA in the cell:
A. mRNA
B. tRNA
C. rRNA
D. Rdna

Q.386 The type of covalent bond that is formed between two monosaccharides is known as:
A. Ester bond
B. Hydrogen bond
C. Peptide bond
D. Glycosidic bond

Q.387 The bond synthesized between glucose and fructose to form sucrose is:
A. α-1, 4 Glycosidic linkage
B. α-1, 2 Glycosidic linkage
C. β-1, 2 Glycosidic linkage
D. α-1, 6 Glycosidic linkage

SKN

Q.388 Carbohydrates are organic molecules and contain which elements?
A. Carbon, Water and Oxygen B. Carbon, hydrogen and oxygen
C. Carbon, Nitrogen and Hydrogen D. Carbon, Sulphur and Hydrogen

Q.389 The intermediates found in both respiration and photosynthesis are:
I. Glucose, II. Glyceraldehydes, III. Ribose, IV. Dihydroxyacetone
A. I and III B. III and IV
C. II and III D. II and IV

Q.390 The most abundant carbohydrate in nature is:
A. Starch B. Lactose
C. Glycogen D. Cellulose

Q.391 Which of the following is an aldose sugar?
A. Glyceraldehyde B. Fructose
C. Dihydroxyacetone D. Ribulose

Q.392 The phospholipid molecule consists of _______ ends that are _______.
A. 2; fatty acids & glycerol
B. 2; hydrophilic head & hydrophobic tail
C. 3; fatty acids, glycerol & phosphate group
D. 2; hydrophobic head & tail

Q.393 The amino acid having hydrogen as R-group is:
A. Alanine B. Glutamic acid
C. Glycine D. Valine

Q.394 Which one of the following sets is correct set that belongs to polysaccharides?
A. Glycogen, Starch, Sucrose B. Cellulose, Starch, Maltose
C. Starch, Chitin, Cellulose D. Steroid, Glycogen, Starch

Q.395 The chemical nature of cell walls in plants and fungi is:
A. Nucleic acid in nature B. Protein in nature
C. Lipid in nature D. Carbohydrate in nature

Q.396 Three fatty acids and one glycerol → Triglyceride.
The above reaction shows:
A. Condensation reaction B. Hydrogenation
C. Hydration D. Hydrolysis

Q.397 In simple carbohydrates the ratio of hydrogen and oxygen is:
A. Same as in lipids B. Same as in nucleic acids
C. Same as in proteins D. Same as in water

Q.398 Find the right statement accordingly.
I) The most common respiratory substance as a source of energy is haemoglobin.
II) The reserved food in animals is starch.
III) The most common respiratory substance as a source of energy is glucose.
A. I only B. II only
C. III only D. I and III

Q.399 Identify the simplest monosaccharide possessing keto group is:
A. Erythrose B. Ribulose
C. Galactose D. Ribose

Q.400 Monosaccharides are major components of:
A. DNA, RNA and Oil B. DNA, NAD and Haemoglobin
C. DNA, ATP and Milk sugar D. None of these

Q.401 The exoskeleton of butterfly is made up of:
A. Silk proteins B. Fatty acids
C. Amino acids D. Chitin

Q.402 Amino acids are organized according to:
A. Information present on tRNA B. Information present on rRNA
C. Information present on mRNA D. All of these

Q.403 How many nucleotides are there in tRNA?
A. 40 – 50 nucleotides B. 1000 nucleotides
C. 75 – 90 nucleotides D. 10 – 50 nucleotides

Q.404 On hydrolysis, oligosaccharides produce:
A. 1-10 monosaccharides B. 2-10 monosaccharides
C. 3-7 monosaccharides D. More than 10 monosaccharides

Q.405 Actin is categorized to which class of proteins?
A. Intermediate B. Simple
C. Globular D. Fibrous

Q.406 Find the odd one out regarding disaccharides.
A. Glucose B. Sucrose
C. Fructose D. Galactose

SKN

Q.407 Glycogen looks like:

A. Cellulose	B. Amylopectin starch
C. Amylose starch	D. None of these

Q.408 Glycolipids consists of:

A. Polysaccharides + long fatty acids	B. Complex sugars + Alcohol
C. Simple sugars + Alcohol	D. Simple sugars + Amino acid

Q.409 Triglycerides are called neutral lipids because of:

A. $-NH_2$ groups are present
B. Charge bearing -OH groups are present
C. -COOH groups are present
D. Charge bearing -OH groups are not present

Q.410 α-1, 4-glycosidic linkage is formed during the:

A. Formation of sucrose	B. Formation of lactose
C. Formation of maltose	D. Both A and C

Q.411 Animals release excess heat in hot environment; it is related to which property of water molecules?

A. Hydrophobic exclusion	B. High heat of vapourization
C. Cohesion	D. High specific heat capacity

Q.412 It is one of two stereoisomers that are mirror images of each other and that are not identical, and is called as:

A. Polymers	B. Monomers
C. Enantiomer	D. All of these

Q.413 Which of the following is not an unsaturated fatty acid?

A. Vegetable oils	B. Oleic acid
C. Linoleic acid	D. Palmitic acid

Q.414 Acylglycerols are formed by:

A. Condensation reaction between fatty acids and water
B. Hydrolysis reaction between fatty acids and glycerol
C. Condensation reaction between fatty acids and glycerol
D. Hydrolysis reaction between fatty acids and water

Q.415 Which one of the following is composed of two monomers?

A. Glucose	B. Chitin
C. Starch	D. None of these

Q.416 Which one of the following is not composed of one kind of monosaccharides?

A. Pectin	B. Chitin
C. Cellulose	D. All of these

Q.417 A product of two amino acids is known as:

A. Disaccharide	B. Diglyceride
C. Dipeptide	D. None of these

Q.418 A change of single nucleotide in DNA is known as:

A. Hydrolysis	B. Condensation reaction
C. Point mutation	D. Esterification

Q.419 Find the helical structure of protein among the following components.

A. β-pleated sheet	B. α-pleated sheet
C. β-helix	D. α-helix

Q.420 In solution, most of the monosaccharides form:

A. Straight chain	B. Ring structure
C. Branched chain	D. 3D structure

Q.421 Proteins at the time of synthesis on ribosomal surface belong to:

A. Primary structure of proteins	B. Secondary structure of proteins
C. Tertiary structure of proteins	D. Quaternary structure of proteins

Q.422 Glycerol is a:

A. Monohydroxy alcohol	B. Dihydroxy alcohol
C. Trihydroxy alcohol	D. Pentahydroxy alcohol

Q.423 What is true about phospholipids?
I) They are derived from palmitic acid.
II) They are derived from nucleic acid.
III) They are derived from phosphatidic acid.

A. I only	B. II only
C. III only	D. I and III

Q.424 Which type of proteins provide immunity?

A. Enzyme	B. Haemoglobin
C. Fibrinogen	D. Antibodies

SKN

Q.425 What is produced on complete hydrolysis of starch & glycogen?
A. Fructose B. Glucose
C. Maltose D. Galactose

Q.426 How many – OH groups are there in glycerol?
A. 1 B. 3
C. 2 D. 4

Q.427 Matrix of bone and cartilage are established by:
A. Keratin B. Histone
C. Collagen D. Elastin

Q.428 Tristearin is a type of simple lipid having molecular formula:
A. $C_{57}H_{110}O_{114}$ B. $C_{57}H_{104}O_6$
C. $C_{57}H_{110}O_{57}$ D. $C_{57}H_{110}O_6$

Q.429 The monomers of glycogen are:
A. α-glucoses B. β-glucoses
C. N-acetyl glucosamine D. Both A and B

Q.430 Organisms can also survive under ice; it is because of:
A. Dehydration process
B. Maximum no. of hydrogen bonding among water molecules
C. Condensation process
D. Both B and C

Q.431 The maximum no. of carbon atoms are present in:
A. Stearic acid B. Palmitic acid
C. Acetic acid D. All of these have equal no. of carbons

Q.432 Which one of the following types of lipids is major constituent of cell membrane?
A. Cholesterol B. Phospholipid
C. Steroid D. Waxes

Q.433 Unsaturated fatty acids:
A. Have higher melting point B. Are more common in animals
C. Are fully saturated with hydrogen D. None of these

Q.434 Which type of haemoglobin causes red blood cells to become stiff and sticky?
A. HBS B. HBA
C. Glutamic acid D. Valine

Q.435 Fatty acid contain how many Carbon atoms in their chains?
A. 2 to 10 B. 20 only
C. 2 to 30 D. 30 only

Q.436 Lecithin is another name of:
A. Phosphatidic acid B. Choline
C. Phosphatidylcholine D. Inositol

Q.437 During the formation of ester bond, water (H + OH) molecule is also released; -OH group comes from:
A. -COOH group of amino acid B. -OH group of glycerol
C. Both of these D. None of these

Q.438 Both cohesion and adhesion properties of water molecules are due to:
A. Covalent bonding B. Hydrogen bonding
C. Ionic bonding D. All of these

Q.439 The structure of a fibrous protein comprises of polypeptide chains in the form of.
A. 3D shape B. Spherical
C. Filament like shape D. None of these

Q.440 Protein category, that is involved in regulation of blood pressure is:
A. Fibrinogen B. Haemoglobin
C. Antibodies D. Hormones

Q.441 The most abundant lipids in living things are:
A. Steroids B. Waxes
C. Acylglycerol D. Terpenes

Q.442 Which one of the following is/are classified as water soluble and inelastic nature of protein(s)?
A. Channel protein B. Myosin
C. Collagen D. All of these

Q.443 Lipids contain double amount of energy as compared to the same amount of carbohydrates; it is because of:
A. Higher proportion of oxygen B. Higher proportion of C-O bonds
C. Higher proportion of C-H bonds D. Lower proportion of C-H bonds

SKN

Q.444 How many different types of fatty acid are there?
A. 20 types
B. 30 types
C. 40 types
D. 50 types

Q.445 3' of tRNA is terminated with base sequence of:
A. ACC
B. CCA
C. CAC
D. AAC

Q.446 The fatty acid, butyric acid consists of:
A. 2C
B. 4C
C. 16C
D. 18C

Q.447 Identify the peptide bond.
A. –C–P
B. –C–O
C. –C–N
D. –C–S

Q.448 Cellulase belongs to which class of biomolecules?
A. A polysaccharide
B. A disaccharide
C. A protein
D. An oil

Q.449 What is true about RNA molecules?
I) They are transcribed from ribosomes.
II) They are transcribed from mRNA.
III) They are transcribed from DNA template.
A. I only
B. II only
C. III only
D. I and III

Q.450 Secondary structure of protein is present in:
A. Pepsin
B. Keratin
C. Insulin
D. Haemoglobin

Q.451 The protein found in quills is:
A. Keratin
B. Myosin
C. Elastin
D. Collagen

Q.452 What is the proportion of mRNA in total RNA contents?
A. 1.1% of the total RNA in a cell
B. 2 to 4% of the total RNA in a cell
C. 5% of the total RNA in a cell
D. 6% of the total RNA in a cell

Q.453 Which type of RNA is the longest among the types of RNA?
A. mRNA
B. tRNA
C. rRNA
D. Either A or B

Q.454 Which of the following is a polysaccharide present in human muscle?
A. amylase
B. collagen
C. glycogen
D. myoglobin

Q.455 At which levels of protein structure do hydrophobic interactions occur?
A. primary, secondary and tertiary
B. primary, secondary, tertiary and quaternary
C. tertiary and quaternary
D. quaternary only

Q.456 A peptide bond is formed between
A. an aldehyde group and an amino group
B. an aldehyde group and a carboxyl group
C. an aldehyde group and an ester group
D. a carboxyl group and an amino group

Q.457 A sequence of amino acids may end is either an amino group ($-NH_2$) or a carboxyl group (-COOH). What is the theoretical number of chemically different dipeptides that may be assembled from 20 different amino acids?
A. 40
B. 80
C. 160
D. 400

Q.458 The secondary order of protein structure is
A. the sequence of amino acids in the polypeptide chain
B. the formation of peptide bonds between amino acids
C. the coiling of the polypeptide chain
D. the folding of the coiled polypeptide chain

Q.459 Polysaccharides are synthesized in plants by the process of
A. condensation
B. glycolysis
C. hydrolysis
D. oxidation

Q.460 Most polysaccharides are composed of chains of condensed
A. cellulose units
B. hexose units
C. pentose units
D. sucrose units

Q.461 Which one of the following types of bond is principally concerned in maintaining the alpha – helix shape of secondary protein structure?
A. disulphide bonds
B. ester bonds
C. hydrogen bonds
D. peptide bonds

SKN

Q.462 Which one of the following molecules contains amino acids?
A. ascorbic acid
B. cellulose
C. collagen
D. galactose

Q.463 Which of the following is a complex of globular protein with non-proteinaceous material?
A. collagen
B. egg albumen
C. haemoglobin
D. fibrinogen

Q.464 What does a haemoglobin molecule contain?
A. Four iron (Fe^{2+}) ions attached to each haem group
B. Four oxygen molecules attached to each haem group
C. Four polypeptide chains each with four attached haem groups
D. four polypeptide chains each with one attached haem group

Q.465 Which of the following does not contain amino acids?
A. Carbonic anhydrase
B. glycogen
C. haemoglobin
D. insulin

Q.466 Which property of proteins enables them to act as pH buffers?
A. they are soluble
B. they contain carboxyl and amino groups
C. they have a high molecular mass
D. they possess both secondary and tertiary structure

Q.467 Due to polar neuron water molecules attract each other to form _________.
A. Dipole
B. Polymers
C. Chain
D. N.O.T

Q.468 At which levels of protein structure do hydrophobic interactions occur?
A. Primary, secondary and tertiary
B. Primary, secondary, tertiary and quaternary
C. Tertiary and quaternary
D. Quaternary only

Q.469 The helical form of a polypeptide chain is due the presence within the molecule of
A. Covalent bonds
B. Disulphide bonds
C. Glycosidic bonds
D. hydrogen bonds

Q.470 Which one of the following is a characteristic of saturated fats which distinguished them from unsaturated fats?
A. They do not contain glycerol
B. they contain a high proportion by mass of oxygen
C. They contain only unbranched fatty acids
D. They have no double bonds between their carbon atoms

Q.471 How many fatty acid molecules are normally present in a fat or oil molecule?
A. 1
B. 2
C. 3
D. 4

Q.472 Which type of bond maintains the helix shape of secondary proteins structure?
A. disulphide
B. ester
C. hydrogen
D. peptide

Q.473 Which molecule contains peptide bonds?
A. ATP
B. Collagen
C. DNA
D. maltose

Q.474 Life emerges on the level of
A. Organelle
B. Biomolecules
C. Cell
D. Organisms

Q.475 Select the correct statement regarding ecosystem
A. Several species living and interacting in the same area
B. Members of the same species living in close association in given area
C. Entire surface region of the world inhabited by living things
D. Community with its environment

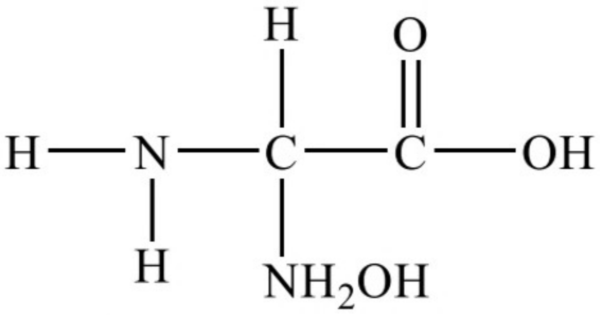
Q.476 All are advantages of hydroponics else?
A. Control weeds and soil disease problem
B. Area require for cultivation increase
C. Crop successfully grown in arid parts of the world
D. Determine role of mineral

Q.477 During process of condensation, seven monomers of glucose $C_6H_{12}O_6$) condensed to form polymer having molecular formula?
A. $C_{42}H_{76}O_{40}$
B. $C_{42}H_{76}O_{42}$
C. $C_{42}H_{72}O_{42}$
D. $C_{42}H_{72}O_{36}$

SKN

Q.478 Straight chain of glucose in polysaccharide form
A. Amylose
B. Amylopectin
C. Amylase
D. Starch

Q.479 Select incorrect statement
A. Small size terpenes are volatile in nature and made up of C_5H_8
B. Cholesterol a precursor for the synthesis of Oxytocin hormone
C. Derivates of some terpenes are found in Vitamin A1 and A2
D. Waxes contain one molecule of fatty acid forming ester bond with long chain of alcohol.

Q.480

$$\mathrm{H{-}N(H){-}C(H)(NH_2OH){-}C({=}O){-}OH}$$
Is structural formula of
A. Glycine
B. Serine
C. Alanine
D. Phenlyalanine

Q.481 All are sources of protein except.
A. Egg
B. Meat
C. Stearin
D. Pulses

Q.482 During nucleotide formation nitrogenous base attached with which carbon of pentose?
A. First carbon
B. Second carbon
C. Third carbon
D. Fifth Carbon

Q.483 Select the correct statement regarding ATP?
A. ATP an energy carrier molecule
B. Mononucleotide act as co-enzyme
C. When loss one phosphate produce 31.81 Kj energy
D. All of These

Q.484 Protein having peptide, hydrogen, ionic and disulphide bond.
A. Primary structure protein
B. Secondary structure protein
C. Tertiary structure protein
D. Quaternary structure protein

Q.485 Most abundent macromolecule of cell.
A. Carbohydrate
B. Protein
C. Lipids
D. Nucleic acid

Q.486 All living bodies are structurally composed of cells and living cell contain a living material called.
A. Proplast
B. Protoplast
C. Protoplasm
D. Proplasm

Q.487 The compounds produced by living organisms are called.
A. Active compounds
B. Reactive compound
C. Biomolecuels
D. All of these

Q.488 Most abundant bioelement of human body.
A. Carbon
B. Hydrogen
C. Oxygen
D. Nitrogen

Q.489 Life activities occur in a cell due to the presence of.
A. Energy
B. Nutrients
C. Water
D. ATP

Q.490 All are monomers else.
A. Amino acid
B. Glucose
C. Nucelotide
D. Cellulose

Q.491 Macromolecules are broken into monomers by the process of hydrolysis with the help of.
A. Analytical enzymes
B. Amylase
C. Hydrolytic enzymes
D. Maltase

Q.492 Which is mismatched?
A. Amino acid→ Protein
B. Glucose → Cellulose
C. Fatty acid → Myosin
D. Nucleotide→ RNA

Q.493 An enzyme found in tears(lysozymes) is
A. Primary structure Protein
B. Secondary structure Protein
C. Tertiary structure Protein
D. Quaternary structure Protein

SKN

Q.494 Head of phospholipids is polar due to
A. Cholesterol
B. Phosphate
C. Fatty acids
D. Glycerol

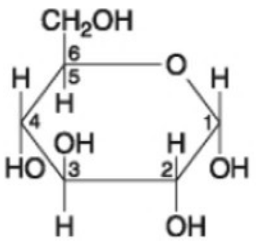
Q.495 What is the chemical mechanism by which cells make polymers from monomers?
A. Phosphodiester linkages
B. Hydrolysis
C. Dehydration reactions
D. Ionic bonding of monomers

Q.496 Which of the following polymers contain nitrogen?
A. Starch
B. Glycogen
C. Cellulose
D. Chitin

Q.497 Which of the following is not a polymer?
A. Glucose
B. Starch
C. Cellulose
D. Chitin

Q.498 A molecule with the chemical formula $C_6H_{12}O_6$ is probably a/an
A. Carbohydrate
B. Lipid.
C. Monosaccharide
D. Both A and C

Q.499 If 2 molecules of the general type shown in given figure were linked together, carbon 1 of one molecule to carbon 4 of the other, the single molecule that would result would be



A. Maltose.
B. Sucrose
C. Glucose
D. Lactose.

Q.500 Lactose, a sugar in milk, is composed of one glucose molecule joined by a glycosidiclinkage to one galactose molecule. How is lactose classified?
A. As a pentose
B. As a hexose
C. As a monosaccharide
D. As a disaccharide
E. As a polysaccharide.

Q.501 All of the following are polysaccharides except
A. Glucagon
B. Starch
C. Chitin
D. Cellulose

Q.502 Which of the following is true of both starch and cellulose?
A. They are both polymers of glucose.
B. They are geometric isomers of each other.
C. They can both be digested by humans.
D. They are both used for energy storage in plants.

Q.503 Which of the following is true of cellulose?
A. It is a polymer composed of sucrose monomers.
B. It is a storage polysaccharide for energy in plant cells.
C. It is a storage polysaccharide for energy in animal cells.
D. It is a major structural component of plant cell walls.

Q.504 All of the following statements concerning saturated fats are true except
A. They are more common in animals than in plants.
B. They have multiple double bonds in the carbon chains of their fatty acids.
C. They generally solidify at room temperature.
D. They contain more hydrogen than saturated fats having the same number of carbon atoms.

Q.505 A molecule with the formula $C_{18}H_{36}O_2$ is probably a
A. Carbohydrate.
B. Fatty acid.
C. Protein
D. Nucleic acid.

Q.506 Which of the following statements is false for the class of biological molecules known as lipids?
A. They are soluble in water.
B. They are an important constituent of cell membranes.
C. They contain more energy than proteins and carbohydrates.
D. They are not true polymers.

Q.507 What is a triacylglycerol?
A. A protein with tertiary structure
B. A lipid made with three fatty acids and glycerol
C. A lipid that makes up much of the plasma membrane
D. A molecule formed from three alcohols by dehydration reactions

SKN

Q.508 Which of the following is true regarding saturated fatty acids?

A. They are the predominant fatty acid in corn oil.
B. They have double bonds between carbon atoms of the fatty acids.
C. They are the principal molecules in lard and butter.
D. They are usually liquid at room temperature.

Q.509 Why are human sex hormones considered to be lipids?

A. They are essential components of cell membranes.
B. They are steroids, which are not soluble in water.
C. They are made of fatty acids.
D. They are hydrophilic compounds.

Q.510 All of the following contain amino acids except

A. Hemoglobin. B. Cholesterol.
C. Antibodies. D. Enzymes.

Q.511 The bonding of two amino acid molecules to form a larger molecule requires

A. The release of a water molecule.
B. The release of a carbon dioxide molecule.
C. The addition of a nitrogen atom.
D. The addition of a water molecule.

Q.512 Polysaccharides, lipids, and proteins are similar in that they

A. Are synthesized from monomers by the process of hydrolysis.
B. Are synthesized from monomers by dehydration reactions.
C. Are synthesized as a result of peptide bond formation between monomers.
D. Are decomposed into their subunits by dehydration reactions.
E. All contain nitrogen in their monomer building blocks.

Q.513 Dehydration reactions are used in forming which of the following compounds?

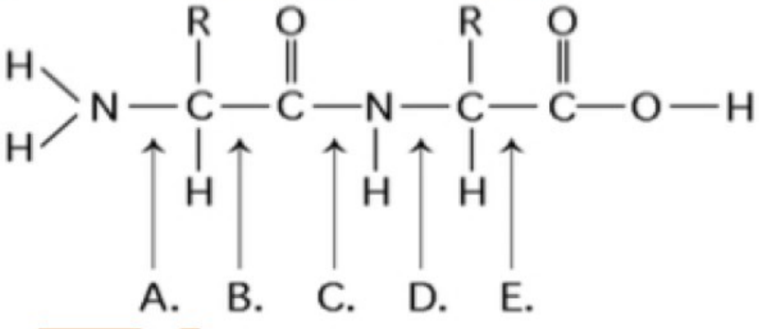
I. Triacylglycerides **II. Polysaccharides** **III.Proteins**

A. I only B. I and II
C. II and III D. I and III
E. I, II and III

Q.514 Upon chemical analysis, a particular polypeptide was found to contain 100 amino acids. How many peptide bonds are present in this protein?

A. 101 B. 100
C. 99 D. 98
E. 97

Q.515 At which bond would water need to be added to achieve hydrolysis of the peptide, back toits component amino acid?



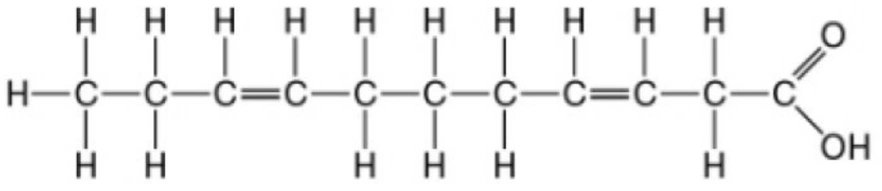
Q.516 Which bonds are created during the formation of the primary structure of a protein?

A. Peptide bonds B. hydrogen bonds
C. Disulfide bonds D. Phosphodiester bonds

Q.517 What maintains the secondary structure of a protein?

A. Peptide bonds B. Hydrogen bonds
C. Disulfide bonds D. Ionic bonds
E. Phosphodiester bonds

Q.518 The molecule shown in given figure is a



A. Polysaccharide. B. Polypeptide.
C. Saturated fatty acid. D. Triacylglycerol.
E. Unsaturated fatty acid.

Q.519 The major purpose of RNA is to
A. Transmit genetic information to offspring.
B. Function in the synthesis of protein.
C. Make a copy of itself thus ensuring genetic continuity.
D. Act as a pattern or blueprint to form DNA.

Q.520 Which of the following best describes the flow of information in eukaryotic cells?
A. DNA →RNA →proteins
B. RNA →proteins →DNA
C. Proteins →DNA →RNA
D. RNA →DNA →proteins

Q.521 Which of the following descriptions best fits the class of molecules known as nucleotides?
A. A nitrogenous base and a phosphate group
B. A nitrogenous base and a pentose sugar
C. A nitrogenous base, a phosphate group, and a pentose sugar
D. A phosphate group and an adenine or uracil

Q.522 Which of the following are nitrogenous bases of the pyrimidine type?
A. Guanine and Adenine
B. Cytosine and Uracil
C. Thymine and Guanine
D. Ribose and Deoxyribose

Q.523 The element nitrogen is present in all of the following except
A. Proteins.
B. Nucleic acids.
C. Amino acids.
D. DNA.
E. Monosaccharides.

Q.524 Which of the following is a diverse group of hydrophobic molecules?
A. Carbohydrates
B. Lipids
C. Proteins
D. Nucleic acids

Q.525 Which of the following store and transmit hereditary information?
A. Carbohydrates
B. Lipids
C. Proteins
D. Nucleic acids

Q.526 Which term includes all others in the list?
A. Monosaccharide
B. Disaccharide
C. Starch
D. Carbohydrate
E. Polysaccharide

Q.527 Which of the following statements concerning unsaturated fats is true?
A. They are more common in animals than in plants.
B. They have double bonds in the carbon chains of their fatty acids.
C. They generally solidify at room temperature.
D. They contain more hydrogen than saturated fats having the same number of carbon atoms.

Q.528 Life arose in the form of
A. Unicellular eukaryotes
B. Simple unicellular
C. Simple multicellular
D. Multicellular prokaryotes

Q.529 Chemical foundation of life is based on
A. Elements
B. Atoms
C. Molecules
D. Cells

Q.530 Which one of the following is not sweet carbohydrate
A. Cellulose
B. Sucrose
C. Galactose
D. Lactose

Q.531 Protein which are consist of two or more chains called
A. Primary structure
B. Secondary structure
C. Tertiary structure
D. Quaternary structure

Q.532 Lipids which are volatile in nature
A. Waxes
B.Acyglycerol
C. Terpenoids
D. Phospholipids

Q.533 All are correct else
A. DNA contain deoxyribose
B. water control all activities of cell
C. PH of cell is maintain by amino group
D. Waxes are lipids

Q.534 Chemical composition of mucoids?
A. Nucleic acid and protein
B. Lipid and protein
C. Carbohydrate and Protein
D. Carbohydrate and lipid

Q.535 Select the correct statement regarding NAD (nicotinamide adenine dinucleotide)
I. Vitamin constituent
II. Act as co-enzyme.
III. Carrier of electron
A. I and II
B. I and III
C. II and III
D. I, II and III

SKN

Q.536 Experiment on bacteriophage experimentally confirmed that______?
A. RNA must be the genetic material
B. DNA must be the carrier of information between nucleus and cytoplasm
C. Deoxyribonucleic acid must be the genetic material
D. Ribonucleic acid must be the carrier between nucleus and cytoplasm

Q.537 Glycolipid in plant cell found in
A. Energy producing cell organelle mitochondria
B. Energy producing cell organelle chloroplast
C. Energy storing vacuole
D. Glycolipid is absent in plant

Q.538 What will happen in concentration of substrate increases in a chemical reaction?
A. Enzyme activity will keep on increasing.
B. Enzyme activity 1st increase then decrease.
C. Enzyme activity will increase and then maintain a steady level.
D. Enzyme activity will not increase at all.

Q.539 "The active site of each enzyme has distinct shape and distribution of charges". This statement refers the_______?
A. Key–lock theory
B. Induce fit model
C. Mosaic model
D. Above statement is incorrect

Q.540 Cell use RNA to make?
A. DNA
B. Protein
C. Chromosomes
D. Carbohydrate

Q.541 The holoenzymes in which prosthetic group is an inorganic ions are known as____?
A. Co-factor
B. Co-enzyme
C. Allosteric group
D. Apoenzyme

Q.542 Select the mismatched
A. Co-enzyme → NADP
B. Co-factor → Manganese
C. FMN → Co-factor
D. Proteozyme→ Amylase

Q.543 All are correct regarding characteristics of enzymes except?
A. Specific in nature and their action
B. Their molecules are much smaller than the substrate
C. React with both acidic and alkaline substances
D. Chemically unchanged during and after reaction

Q.544 Substance which obstruct enzymatic reactions by binding to a part of the enzyme away from the active
A. Competitive inhibitor
B. Non-Competitive inhibitor
C. Activators
D. Co-factors

Q.545 Each enzyme contain groove or dimple _________?
A. Allosteric site
B. Active site
C. Binding site
D. Reactive site

Q.546 Enzyme activities can be accelerated by
A. Organic co-enzymes like NAD and FAD
B.Inorganic Co-factors like ADP & NADP
C. Organic co-factors like FMN and ATP
D. Inorganic Activators like Mn, Ni Mg & CL

Q.547 What will happen to enzyme activity when substrate concentration increases by three folds?
A. Enzyme activity reduce two half
B. Enzyme activity increase to three time
C. Enzyme activity increase two time
D. Enzyme activity reduce three time

Q.548 Enzymes are
I. Proteinaceous in nature
II. All are protein in nature
III. Lower the amount of activation energy
A. I only
B. I and II
C. III only
D. I and III

Q.549 Conjugated molecule which is weakly acidic and soluble in water
A. Glycolipid
B. Glycoprotein
C. Nucleoprotein
D. Lipoprotein

Q.550 Two nucleotides are linked by _________________ of one another
A. Pentose
B. Phosphate
C. Nitorgenous base
D. None of these

Q.551 Nucleoside refer to
A. Nitrogenous base and phosphate
B. Pentose and Phosphate
C. Nitrogenous base and pentose
D. Nitrogenous base and Hexose

Q.552 Inhibitors which are mimics of substrate called

A. Competitive inhibitors
B. Non-competitive inhibitors
C. Competitive activators
D. Non-competitive activators

Q.553 An enzymeCarbonic anhydrase) which is help in transport of Co2 through blood activated by

A. Mg
B. Ca
C. Zn
D. C

Q.554 Protein part of holoenzyme is called

A. Apoenzyme
B. Proteozymes
C. Co-factors
D. Co-enzymes

Q.555 Which one of the following is the mechanism of action of enzymes?

A. They act upon substrate molecules to release new substrate molecules.
B. They actually increase the amount of energy of activation.
C. Enzymes dramatically decrease the amount of energy of activation.
D. Enzymes break product molecules to release new product molecules.

Q.556 If by adding substrate molecules in a reaction, initially it increases but after a period of time it maintain a steady level this shows that?

A. Enzyme molecules become saturated with substrate
B. Enzyme molecules denatured.
C. No effect on enzyme activity.
D. Both “A” and “B”.

Q.557 Most vitamins are ________ or raw material from which _______ are made?

A. Co-enzymes and co-factor
B. Co-factor and Co-enzymes
C. Co-enzymes and co-enzymes
D. Co-factor and Co-factor

Q.558 All are activators for enzymes except

A. Mg
B. Ca
C. Zn
D. C

Q.559 An enzyme accelerates a metabolic reaction by?

A. Increase overall free energy change for the reaction.
B. Making an endergonic reaction occur spontaneously.
C. Lowering the activation energy.
D. Making the substrate molecule more stable.

Q.560 Which statement about enzyme is not true?

A. They consist of protein, with or without a non-protein part.
B. They change the rate of catalyzed reaction.
C. They are sensitive to heat.
D. They are non-specific in their action.

Q.561 The rate of an enzyme catalyzed reaction?

A. Is constant under all conditions.
B. Decrease as substrate concentration increase.
C. Cannot be measured.
D. Can be reduced by inhibitors.

Q.562 Choose the correct statement regarding enzymes?

I. They act on specific substrate
II. Decrease the amount of energy of activation.
III. Activated by certain organic ions

A. I only
B. II only
C. I and II
D. I and III

Q.563 In a chemical reaction in which two glucose molecules are condensed to form maltose molecule enzymes are required in?

A. Small amounts.
B. Huge amounts.
C. Enzymes are not required at all.
D. Enzymes are used but their role is not clear.

Q.564 Which one of the following is pure proteinaceous enzyme?

A. Amylase.
B. Pepsin.
C. Lipases.
D. Both ‘A’ and ‘B’.

Q.565 Enzyme molecule has a specific site in which substrate molecule attaches, known as active site. The site other than active site is known as?

A. Active site.
B. Specific site.
C. Allosteric site.
D. Non specific site.

Q.566 Induced fit model of enzyme action was presented by?

A. Koshland.
B. Fischer.
C. Thomas Cech.
D. Sidney Altman.

SKN

Q.567 What is apoenzyme?
A. Protein part of enzyme. B. Non protein part of enzyme.
C. Co factor. D. Co enzyme.

Q.568 Inorganic non protein part of enzyme molecule is known as?
A. Protein part of enzyme. B. Non protein part of enzyme.
C. Co factor. D. Co enzyme.

Q.569 What is coenzyme?
A. Protein part of enzyme. B. Non protein part of enzyme.
C. Non protein organic part of enzyme. D. Non protein inorganic part of enzyme.

Q.570 Fisher proposed a _____________ theory of enzyme activity?
A. Lock and key theory. B. Induced fit model.
C. Role of substrate in enzyme activity. D. Role of pH in enzyme activity.

Q.571 The rate of enzymatic reaction is ______on the substrate concentration?
A. Directly. B. Inversely.
C. Both of these D. above statement is wrong.

Q.572 The activity of almost every enzyme in a cell is regulated by:
A. Feed-back inhibition B. Positive feedback
C. Negative feedback D. Feedback control

Q.573 The pH at which enzyme perform its best activity is known as?
A. Minimal pH B. Optimal pH.
C. Defined pH. D. All of these.

Q.574 If the amount of an enzyme is increased by two folds the reaction rate will be ____?
A. No change. B. Double.
C. Three time. D. Depend upon the enzyme.

Q.575 Chemical molecules which attached at allosteric site and inhibit enzyme activity are known as?
A. Inhibitors. B. Competitive inhibitors.
C. Non competitive inhibitors. D. Activators.

Q.576 Which one of the following is true for competitive inhibitors?
A. They attach at active site. B. Compete with substrate molecules.
C. Their effects are reversible. D. All of these.

Q.577 An mRNA codon for the amino acid lysine is AAG.
How many lysine molecules are present in the polypeptide, containing five amino acids, coded for by the following DNA template?
TTCGGTTTCTTATTC
A. 0. B. 2.
C. 3. D. 4.

Q.578 All are correct regarding DNA else?
A. One Complete turn of DNA is 3.4×10^{-9}m
B. The uprights of the ladder are made up of deoxyribose and phosphoric acid part of nucleotide
C. Each pair of nucleotides is held together by two/three hydrogen bonds.
D. Both polypeptide strands remain separated by 2nm

Q.579 The statement describe the base pairing in DNA is
A. Purine bases always pair with purine bases
B. Purine bases can only pair with pyrimidine bases
C. Adenine cannot pair with thymine
D. Hydrogen bonding can only takes place between pyrimidine

Q.580 A temperature beyond optimum
A. Can affect the shape of an enzyme B. Lowers the energy of an enzyme
C. Makes cells less susceptible to disease. D. Both A and C.

Q.581 What is the advantage of DNA having two complementary strands
A. Two chromatids can pair-up
B. Semi-conservative replication is possible
C. Both Transcription and replication occursimilterasly
D. Bond between phosphate group

Q.582 A DNA molecules has 28% of Adenine as base of a cell what is the % of Cytosine in the DNA
A. 18% B. 22%
C. 28% D. 36%

Q.583 A bacteria a growing for many generations on a medium containing N15 isotopes. It contains 36% of Adenine in its DNA. The same bacterium was transferred to a medium in which only Nitrogen source is N14. What was the percentage of guanine in DNA?
A. 14% B. 18%
C. 28% D. 36%

Q.584 A DNA analysed and calculated the relative amount of four nitrogenous bases. The result are shown in table

Purine		Pyrimidine	
Adenins	**Base 1**	**Base 2**	**Base 3**
28.2%	21.5%	27.8%	22.5%

What are 1,2,3 bases?
A. Cytosine thymine guanine
B. Cytosine Guanine thymine
C. Guanine thymine cytosine
D. thymine cytosine guanine

Q.585 Following events occur in the replication of DNA.
i) Bonds between complementary bases break
ii) Bonds
iii) DNA molecule uncoil
iv) Opposite strands separate
v) Sugar – phosphate bond form.
vi) Free nucleotides align with complementary nucleotides on each strand.
A. i→ iii → v→ iv→ ii→ vi
B. iii→ i→ iv→ vi→ ii→ v
C. iii→ vi→ i→ iv→ v→ ii
D. iv→ iii→ i→ vi→ v→ ii

Q.586 What is the effect of the enzymes deoxyribonuclease?
A. DNA broken at specific site
B. DNA fragments joined together
C. DNA replication
D. DNA transcription

Q.587 Pyrimidine bases contain 4carbon atoms and purine bases contain 5. How many carbon atoms are there in a nucleotide containing cytosine?
A. 8
B. 9
C. 10
D. 11

Q.588 Which of the following statements about the structure of DNA is incorrect.
A. One complete turn require 3.4 nm and 10 base pairs
B. Backbone of each strand runs in opposite directions relative to each other.
C. Each pair of nucleotides in held together by three hydrogen bonds.
D. The width of the DNA strand is a constant 2nm.

Q.589 The nitrogenous bases present in RNA are the same as those present in DNA except that
A. Adenine replaces Cytosine
B. Adenine replaces thymine
C. Uracil replaces Adenine
D. Uracil replaces thymine

Q.590 A fragment of DNA

-A	-T
-G	-C
-T	-A
-C	-G

How many hydrogen bonds are involved in holding these 2 strands of DNA together.
A. 10
B. 8
C. 6
D. 4

Q.591 It was found during study of an organism that it contains 18% Adenine, 32% Guanine, 32% Cytosine and 18% Thymine.
I. Genetic material in RNA
II. Genetic material in DNA
III. Genetic material may be double stranded
Which statement(s) can be made about this organism
A. I only
B. I and II
C. II and III
D. I, II and III

Q.592 What is the function of some enzyme in a seed during germination
A. To break down insoluble food into soluble substances
B. To increase the rate of photosynthesis
C. To increase water absorption
D. To make starch from storage

Q.593 A polypeptide chain has following sequence of Amino acid
A→B → C → D → B → E → C
mRNA codon are
amino acid A- UGU, **amino acid B- GAU, amino acid C-CAC**
amino acid D-UAG, **amino acid E AAG**
Which of the following sequences of nitrogenous base at DNA to synthesis above polypeptide?

A. ACACTTGTGATGCTATTCGTG
B. ACACUAGUGAUGCUAUUCGUG.
C. ACACTAGTGATGCTAAACGTG
D. ACACTAGTGATCCTATTCGTG.

Q.594 Synthetic mRNA → Polypeptide produce
UUU UUUUUUUUU → Phenylalanine–Phenylalanine–Phenylalanine-Phenylalanine
AAA AAAAAAAAA → Lysine - Lysine -Lysine - Lysine
UUU AAA UUU AAA → Phenylalanine - Lysine -Phenylalanine – Lysine
What are DNA code for phenylalanine and lysine.

Phenylalanine	**Lysine**
A. AAA	TTT
B. AAA	UUU
C. GGG	CCC
D. TTT	GGG

Q.595 If the sequence of nucleotide bases in DNA is TAGC, then the sequence of bases in tRNA will be?

A. ATGC
B. TAGC
C. UTGC
D. UAGC

Q.596 Following are the stages in the cellular synthesis of protein
I. Movement of mRNA from nucleus to cytoplasm **II. Peptide linkage**
III. Transcription **IV. Polypeptide formation** **V. mRNA attachment**

A. I→III→II→V→IV
B. I→V→III→IV→II
C. III→I→V→II→IV
D. III→IV→I→II→V

Q.597 Codes at DNA for amino acids are
CGG – Alanine, **TTT- Lysine,** **GCG –arginine,**
AAA Phenylalanine, **CCA-Glycine,** **CAA- valine.**
A polypeptide chain –Arginine – Glycine- Lysine- Valine – alanine

CGC	**GUU**	**AAA**	**GUU**	**GCC**

Which triplet contain error

A. 1st
B. 2nd
C. 3rd
D. 4th

Q.598 Three consecutive bases in the DNA molecule work as the code for each amino acid in a protein molecule What is maximum number of different triplets that could occur.

A. 16
B. 24
C. 60
D. 64

Q.599 The DNA code for glutamic acid is CTC or CTT the code for Valine is CAA or CAT. In sickle cell haemoglobin, valine is present instead of glutamic acid. Assuming a single base pair substitution has occurred what is the mRNA code in the affected mutant.

A. CUU
B. GAA
C. GAG
D. GUA

Q.600 Insulin is a protein containing 51 amino acids. These include 17 of the 20 different amino acids commonly occurring in proteins. What are the minimum number of different kinds of tRNA molecules involved synthesis of insulin?

A. 3
B. 17
C. 20
D. 51

Q.601 Insulin molecule is composed of two polypeptide chains, one consisting of 20 amino acids and other consisting 31. What is the minimum number of nucleotide base of DNA required to code this molecule.

A. 20
B. 51
C. 102
D. 153

Q.602 One complete turn of double helix of DNA contain 10 pairs, of bases with 3.4nm length. What is length of the DNA coding a protein of 150 amino acids?

A. 153nm
B. 300nm
C. 120nm
D. 15nm

Q.603 In a genetic engineering experiment a piece of DNA containing 6000 nucleotides in transcribed and translated into protein, How many amino acids are required.

A. 1000
B. 2000
C. 3000
D. 4500

Q.604 A synthetic mRNA molecule is made by using 2 types of nucleotides only i.e Adenine and Cytosine how many different codon could it contain.

A. 2
B. 4
C. 8
D. 16

Q.605 An mRNA CODON for amino acid alanine is GCC. How many alanine molecules are present in polypeptide, containing eight amino acids, coded by the following DNA template?

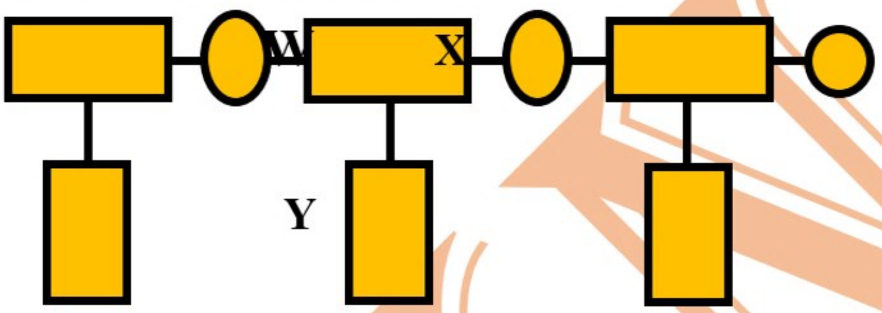
TCG GCC TAC CGG GCC CAT GCC AAT

A. 0
B. 1
C. 2
D. 3

Q.606 Magnesium (Mg^{+2}) is an inorganic activator for the enzyme

A. Mangnase
B. Phosphatase
C. Carbonic anhydrase
D. Lipase

Q.607 Diagram represent anti codon



What do w, x, y respect

	W	X	Y
A.	$C_5H_{10}O_4$	Nitrogenous base	Base Phosphate
B.	$C_5H_{10}O_4$	Phosphate	Nitrogenous base
C.	$C_5H_{10}O_5$	Nitrogenous base	Phosphate
D.	$C_5H_{10}O_5$	Phosphate	Nitrogenous base

Q.608 A polypeptide chain of ten amino acid contains 4 different kinds of amino acid what is the theoretical minimum number of tRNA molecules are required to translate the mRNA of this protein.

A. 2
B. 4
C. 8
D. 12

Q.609 DNA molecules carries information in

A. Its amino acid sequence
B. Its sugars and phosphates in back bone
C. Order of nucleotides in the molecule
D. Total number of nucleotides it contain

Q.610 Chromonemata exhibits deeper staining regions along their lengths, giving the threads the appearance of strings of beads, these intensely staining areas are the

A. Centromere
B. Chromonema
C. Chromosomes
D. Chromomeres

Q.611 The length of chromosome from centromeres to its terminal end is called

A. Chromatids
B. Arm
C. Centrosome
D. Chromomeres

Q.612 Arrange the steps of catalytic action of an enzyme in order and choose the right option:

I. The active site of enzyme is in close proximity of the substrate and breaks the chemical bonds of the substrate.

II. The binding of substrate induces the enzyme to alter its shape fitting more tightly around the substrate.

III. The enzyme releases the products of the reaction and the enzyme is free to bind to another substrate

Q.613 IV. The substrate binds to the active site of the enzyme fitting into the active site

A. IV→III→II→I
B. III→II→I→IV
C. IV→II→I→III
D. II→I→IV→III
E. II→I→III→IV

Q.614 What is a ribozyme?

A. An enzyme that uses RNA as a substrate
B. An RNA with enzymatic activity
C. An enzyme that catalyzes the association between the large and small ribosomal subunits
D. An enzyme that synthesizes RNA as part of the transcription process
E. An enzyme that synthesizes RNA primers during DNA replication

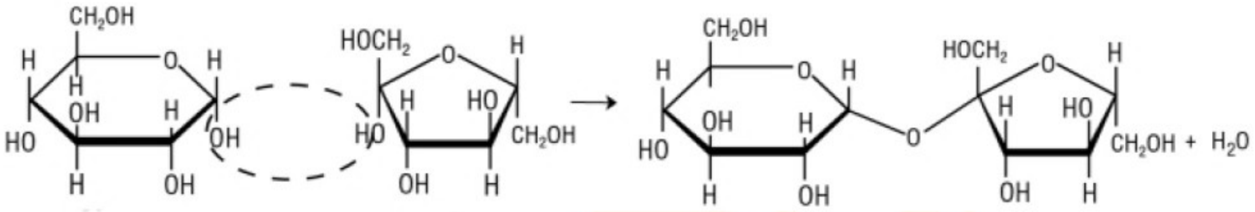
Q.615 High specific heat capacity plays key role in:

A. Maintaining integrity of lipid bilayer membranes
B. Stabilizing temperature
C. Producing cooling effect
D. Bringing about chemical reactions

Q.616 Pick an example of a trace element:

A. Carbon
B. Zinc
C. Phosphorus
D. Potassium

Q.617 Formation of has been depicted in following diagram.



A. Maltose
B. Lactose
C. Raffinose
D. Sucrose

Q.618 Which of the following molecule is more by percentage weight in bacterial cell than mammalian cell?

A. RNA
B. Proteins
C. Carbohydrates
D. Lipids

Q.619 Hydrogen bonding cannot be present in___________ of protein.

A. Primary structure
B. Secondary structure
C. Tertiary structure
D. Quaternary structure

Q.620 Pick a protein that is elastic in nature:

A. Immunoglobin G
B. Elastin
C. Myoglobin
D. Phosphofructokinase

Q.621 Which of the following is an amino acid?

A. $C_{18}H_{32}O_{16}$
B. $C_{57}H_{110}O_{6}$
C. $C_{300}H_{500}O_{250}$
D. $C_{42}H_{85}O_{23}N_{17}S$

Q.622 It has more liquid like consistency than others:

A. Palmitic acid
B. Stearic acid
C. Linoleic acid
D. Oleic acid

Q.623 Catalytic type of RNA is:

A. tRNA
B. rRNA
C. mRNA
D. Ribozyme

Q.624 What is/are functions of conjugated molecules?

A. Present in white matter of brain
B. Acts as hormones
C. Part of blood antigens
D. All A, B, C

Q.625 A protein that is part of defense system for a particular type of living organism:

A. Taq polymerase
B. EcoR1
C. Hexokinase
D. RuBisC0

Q.626 Which of the following is more specific?

A. Lactase
B. Pepsin
C. Trypsin
D. Lipase

Q.627 Which of the following is an example of coenzyme?

A. Carbohydrates in glycoproteins
B. Magnesium in PCR reaction for Polymerase
C. Chloride ion in saliva for amylase
D. during succinate conversion to fumarate

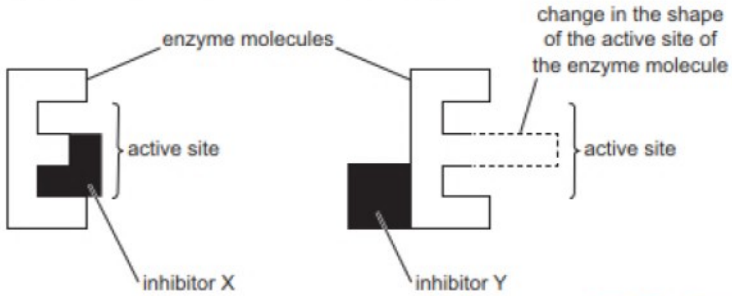
Q.628 Optimum PH for working of pancreatic lipase is:
A. 7.00
B. 9.00
C. 9.70
D. 6.00

Q.629 Phosphorylation of glucose done by:
A. Kinase
B. Hydrogenase
C. Phosphatase
D. Isomerase

Q.630 An enzyme which catalyzes different substrates into single product:
A. Hexokinase
B. RNA polymerase
C. DNA polymerase III
D. RNA polymerase II

Q.631 ATP binds to _____________ of phosphofructokinase.
A. Allosteric site
B. Active site
C. Binding site
D. Catalytic site

Q.632 The diagram represents the reversible interaction between the active site of an enzyme and different inhibitors, X and Y.


enzyme molecules
change in the shape of the active site of the enzyme molecule
active site
active site
inhibitor X
inhibitor Y

Which row correctly identifies the type of inhibition shown by inhibitor X and inhibitor Y?

	X	Y
A.	competitive	competitive
B.	competitive	non-competitive
C.	non-competitive	competitive
D.	non-competitive	non-competitive

Q.633 All are characteristics of monosaccharides except:
A. All carbon contains OH except carbonyl carbon
B. Digestion by amylase enzyme
C. Primary product of photosynthesis
D. Very simple and very sweet in taste

Q.634 Nucleotide that cannot be present in molecule of RNA:
A. TMP
B. UMP
C. CMP
D. AMP

Q.635 Deficiency of this can cause intestinal gas in some people:
A. Amylase
B. Lactase
C. Sucrase
D. Maltase

Q.636 The temperature where an inactive enzyme becomes active again is called as:
A. Maximum temperature
B. Optimum temperature
C. Minimum temperature
D. Median temperature

Q.637 Most abundant protein in blood:
A. Actin
B. Hemoglobin
C. Collagen
D. Titin

Q.638 Type of bond that stabilizes structure of hereditary material:
A. Peptide
B. Phosphodiester bond
C. Glycosidic
D. Hydrogen bond

Q.639 Changing the pH from optimum results in:
A. Increase in rate of reaction
B. Reaction rate increases or decreases
C. Decrease in rate of reaction
D. Reaction rate remains constant

Q.640 Which of the following bond is present in all structural levels of protein?
A. Disulfide bond
B. Ionic bond
C. Hydrogen bonding
D. Peptide bond

Q.641 Number of haem group/s present in myoglobin:

A. 4 B. 1

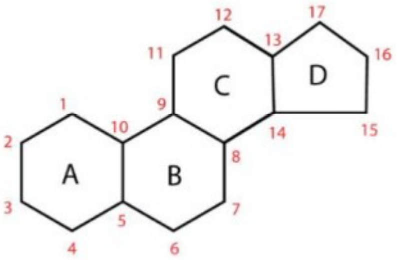
C. 8 D. 16

Q.642 Inside red blood cells hemoglobin is synthesized from cytosolic ribosomes, each flat linear α chain and β chain of haemoglobin synthesized by ribosome exhibit _________ structure.

A. Primary B. Tertiary

C. Secondary D. Quaternary

Q.643 It is precursor of all compounds EXCEPT:



A. Growth hormone B. Bile acids

C. Testosterone D. Estrogen

Q.644 Vitamin A is an example of:

A. Monoterpene B. Diterpene

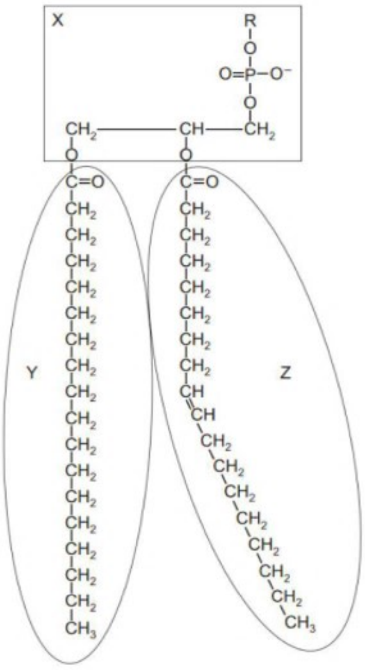
C. Triterpene D. Polyterpene

Q.645 Which of the followings is not an inhibitor of enzymes?

A. Cyanide B. Maltose

C. Pencillin D. NADH

Q.646 The diagram shows a phospholipid molecule divided into three regions, X, Y and Z. R, in region X, represents a range of possible chemical groups:



Regions X, Y and Z affect the properties of cell surface membranes in different ways. Which row shows the effect of each region on the properties of a cell surface membrane?

	Increases permeability for hydrophobic molecules	**Repels polar molecules**	**Attracts water molecules**
A	X	X	Y and Z
B	Y+Z	Y and Z	X
C	Y and Z	X	Y and Z
D	Z	Y and Z	X

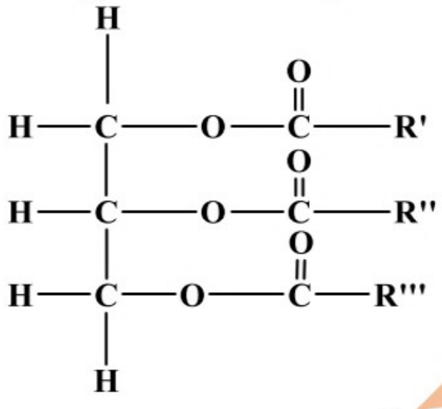
Q.647 Which of the following is not a macromolecule?

A. Nucleic acid
B. Nucleotide
C. Polysaccharides
D. Proteins

Q.648 An example of monounsaturated fatty acid is:

A. Palmitic acid
B. Stearic acid
C. Oleic acid
D. Linoleic acid

Q.649 Which enzyme can digest the following molecule?



A. Amylase
B. Pepsin
C. Lipase
D. Lactase

Q.650 It is not a feature of lipids:

A. Primary source of energy
B. Provides insulation
C. Protects from abrasive damage
D. Part of cellular membranes

Q.651 There are four test tubes with starch compounds. After sometimes substance Y is added in all test tubes. First 3 test tubes showed blue color but no change in color was shown in test tube 4. What would be the compound that was already present in test tube 4?

A. Amylase
B. Iodine
C. Lipase
D. Glycogen

Q.652 This compound cannot change color of Fehling's solution:

A. Glucose
B. Maltose
C. Sucrose
D. Lactose

Q.653 β-1,4 glycosidic linkage is present in:

A. Glycogen
B. Starch
C. Fructose
D. Cellulose

Q.654 Molecular weight of glucose is 180 g/mol. Calculate molecular weight of maltose:

A. 360
B. 342
C. 90
D. 162

Q.655 Type of conjugated molecules that are present in white matter of brain and myelin sheath of nerve fibers:

A. Lipoproteins
B. Glycoproteins
C. Glycolipids
D. Nucleoproteins

Q.656 Suppose a double stranded DNA molecule has 100 base pairs and all bases are present in equal number. Calculate number of hydrogen bonds in that molecule:

A. 200
B. 250
C. 160
D. 210

Q.657 Formation of a dinucleotide results from:

A. Condensation
B. Decarboxylation synthesis
C. Hydrolysis
D. Oxidation

Q.658 Primary structure of DNA is maintained by:

A. Hydrogen bonds
B. Phosphodiester bonds
C. Hydrophobic interactions
D. Peptide bonds

Q.659 A protein which is not an enzyme:

A. Isomerase
B. Rennin
C. Prolactin
D. Maltase

SKN

Q.660 An enzyme which would be denatured in intestine:

A. Pepsin
B. Trypsin
C. Pancreatic lipase
D. Enterokinase

Q.661 The active site of an enzyme:

A. Never changes
B. Forms no chemical bond with substrate
C. Determines by its structure the specificity of the enzyme
D. Looks like a lump projecting from the substrate of an enzyme

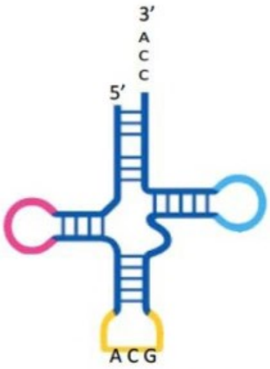
Q.662 A few amino acids constitute active site. Others play role in maintaining:

A. Fibrous shape
B. Spindle shape
C. Cylindrical shape
D. Ellipsoidal shape

Q.663 Which of the followings is the feature of enzymes?

A. Non-crystalline
B. Elastic nature
C. Soluble in aqueous solution
D. Fibrous shape

Q.664 The diagram represents:



A. mRNA
B. tRNA
C. rRNA
D. Ribozyme

Q.665 Of the total weight of a bacterial cell, carbohydrates constitute only:

A. 1%
B. 2%
C. 3%
D. 4%

Q.666 18% of the total weight of a mammalian cell is the:

A. Water
B. Proteins
C. Carbohydrates
D. Lipids

Q.667 The amount of heat required to raise the temperature of 01g of water by 01 degree:

A. Specific Heat Capacity
B. Heat of vaporization
C. Electronegativity
D. Electron affinity

Q.668 Name the process that involves the breakdown of large molecules into smaller ones utilizing water molecules:

A. Hydrolysis
B. Reduction
C. Oxidation
D. Condensation

Q.669 All of the following are formed through condensation reactions except:

A. Glucose
B. Amylopectin
C. Insulin
D. Triglyceride

Q.670 Ester bond is present in all except

A. Two nucleotides
B. Glycerol and phosphoric acid
C. Glycerol and fatty acid
D. Two amino acids

Q.671 All are uses of water by Living organisms except:

A. as lubricant & for protection
B. as cooling agent & thermo-stabilizer
C. metabolism
D. source of energy

Q.672 Value of heat capacity of water is ____:

A. 1.0 cal/g
B. 10 cal/g
C. 100 kcal/kg
D. 574 kcal/kg

SKN

Q.673 What will happen if water content of protoplasm is reduced as low as 10 percent?

A. Cell will die
B. Metabolism will pace up
C. No effect
D. Metabolism will slow down

Q.674 Temperature of water rises and falls more slowly as compared to other liquids due to its ____________ property.

A. Polar nature
B. Heat of vaporization
C. Specific Heat
D. Ionization

Q.675 A biochemical test used for detection of reducing sugars is:

A. Biuret test
B. Benedict test
C. Spot test
D. Iodine test

Q.676 All of the following elements are found in all carbohydrates except:

A. Carbon
B. Hydrogen
C. Nitrogen
D. Oxygen

Q.677 Ratio of hydrogen and oxygen in carbohydrates is:

A. 1:1
B. 2:2
C. 1:2
D. 2:1

Q.678 General formula of carbohydrates is:

A. Cn(H2O)n
B. (CH2O)n
C. Cx(H2O)y
D. Cn(H2O)n-1

Q.679 These are primary products of photosynthesis:

A. Carbohydrates
B. Proteins
C. Lipids
D. Nucleic acids

Q.680 It is not true for carbohydrates:

A. Carbohydrates are used in synthesis of lipids
B. Carbohydrates are less soluble than fats in water
C. Carbohydrates form a component of nucleic acids
D. Carbohydrates are utilized in the synthesis of amino acids

Q.681 It is not a carbohydrate:

A. Starch
B. Glycogen
C. Chitin
D. Cutin

Q.682 Most of the energy from glucose is released by breakdown of:

A. C — O
B. C — N
C. C — H
D. C — OH

Q.683 $C_n(H_2O)n$ is not applicable on:

A. Glucose
B. Fructose
C. Deoxyribose
D. Ribose

Q.684 The reducing sugars are so called because they can _______________ electron/s:

A. Donate
B. Gain
C. Share
D. Excite

Q.685 All of the following are polymers of glucose except:

A. Glycogen
B. Cellulose
C. Amylase
D. Amylopectin

Q.686 Glycosidic bond cannot be found in:

A. Glucose
B. Cellulose
C. Glycogen
D. Lactose

Q.687 The covalent bond between two monosaccharides is called:

A. Glycosidic linkage
B. Glucosidic linkage
C. Peptide linkage
D. Ester linkage

Q.688 Most familiar disaccharide is:

A. Maltose
B. Lactose
C. Sucrose
D. Cellobiose

Q.689 An important sugar occurring only in animals is:

A. Glucose
B. Lactose
C. Sucrose
D. Fructose

Q.690 Hydrolysis of which of the following would yield only glucose?

A. Sucrose
B. Maltose
C. Lactose
D. Cellulase

Q.691 Structural polysaccharides include:

A. Cellulose, Hemicellulose, Chitin
B. Cellulose, Starch, Chitin
C. Cellulose, Starch, Glycogen
D. Cellulose, Glycogen, Chitin

Q.692 It is an example of polysaccharide that is soluble in hot water:

A. Amylose
B. Glycogen
C. Cellulose
D. Amylopectin

Q.693 Most abundant carbohydrate in nature is:

A. Starch
B. Glycogen
C. Hemicellulose
D. Cellulose

Q.694 Type of glycosidic linkage present in cellulose is:

A. α 1, 4
B. β 1, 4
C. α 1, 4 and α 1, 6
D. β 1, 4 and β 1, 6

Q.695 Primary structure of a protein molecule does not comprise:

A. Number of amino acids
B. Sequence of amino acids
C. Size of protein molecule
D. Shape of protein molecule

Q.696 All proteins in living organism always show following structural levels:

A. Primary & secondary structure
B. Secondary & tertiary structure
C. Tertiary & quaternary structure
D. Secondary & quaternary structure

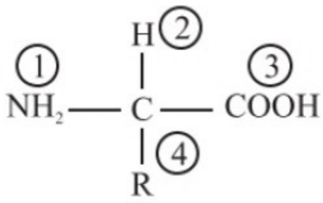
Q.697 In quaternary structure, polypeptide chains are aggregated and held together by all of the following except:

A. Hydrophobic interactions
B. Glycosidic linkages
C. Hydrogen bond
D. Ionic bond

Q.698 It is an example of globular protein:

A. Myosin
B. Fibroin
C. Fibrinogen
D. Keratin

Q.699 An amino acid molecule has the following structure:



Which two of the groups combine to form a peptide link?

A. 1 and 2
B. 1 and 3
C. 2 and 3
D. 3 and 4

Q.700 The sequence of amino acids in a protein is determined by sequence of ____ in _____:

A. Bases, tRNA
B. Nucleotides, Trna
C. Nucleotides, rRNA
D. Nucleotides, DNA

Q.701 Bond that is most sensitive to rise in temperature is:

A. Peptide bond
B. Ionic bond
C. Disulphide bond
D. Hydrogen bond

Q.702 Number of carbon atoms in simplest amino acid are:

A. 2
B. 3
C. 4
D. 5

Q.703 Which amino acid is essential for formation of disulphide linkages in proteins?

A. Glycine
B. Alanine
C. Serine
D. Cysteine

Q.704 β-Pleated sheet is an example of:

A. Primary structure
B. Secondary structure
C. Tertiary structure
D. Quaternary structure

Q.705 Chemical compounds that are defined on base of physical properties are:

A. Carbohydrates | B. Proteins
C. Lipids | D. Nucleic acids

Q.706 Lipids store energy due to higher proportion of:

A. C — C bonds | B. C — O bonds
C. C — H bonds | D. C — N bonds

Q.707 This is an example of conjugated molecule of lipid:

A. Acylglycerol | B. Phospholipid
C. Glycoprotein | D. Glycolipid

Q.708 Most important components of triglycerides are:

A. Glycerols | B. Fatty acids
C. Ketones | D. Isoprenoid

Q.709 Functional group of fatty acid is:

A. $-CH_3$ | B. $-OH$
C. $-CHO$ | D. $-COOH$

Q.710 This is a list of some characteristics of fats and oils.

	FATS	**OILS**
I)	Saturated fat acids	Unsaturated fa acids
II)	Solid at room temperature	Liquid at room temperature
III)	Can be crystalized	Cannot be crystallized
IV)	Obtained from animals	Obtained from lants

Which characteristics are applicable to all fats and all oils?

A. I & II | B. I & III
C. I, II & III | D. I, II, III & IV

Q.711 Saturated fatty acids have C-C double bonds:

A. 0 | B. 2
C. 1 | D. 3

Q.712 All of the following nitrogenous bases are found in phospholipids except:

A. Choline | B. Cytosine
C. Ethanolamine | D. Serine

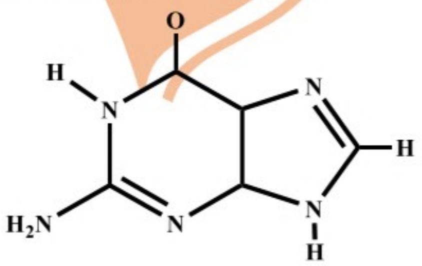
Q.713 Fatty acids are found in all of the following except:

A. Acylglycerols | B. Phospholipids
C. Waxes | D. Terpenoids

Q.714 Formation through condensation of which of the following is not associated with release of water:

A. Amylose | B. Mrna
C. Fibrin | D. Carotenoid

Q.715 Identify the structure:



A. Guanine | B. Uracil
C. Thymine | D. Cytosine

Q.716 Which of the following represent high energy bonds in ATP?

A. Ribose – Adenine | B. Ribose – Phosphate
C. Phosphate – Adenine | D. Phosphate – Phosphate

Q.717 In a typical nucleotide the nitrogenous base is attached to ______ carbon of pentose sugar:

A. C-1 | B. C-5
C. C-3 | D. C-6

Q.718 Phosphodiester bond is formed between:

A. Two phosphate groups
B. Two phosphates & one hydroxyl group
C. One phosphate & two hydroxyl groups
D. Two phosphate & two hydroxyl groups

Q.719 All of the following are examples of dinucleotides except:

A. ADP
B. NAD
C. NADP
D. FAD

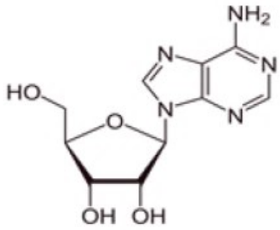
Q.720 It is the major proportion of RNA in the cell:

A. mRNA
B. tRNA
C. rRNA
D. rDNA

Q.721 Messenger RNA carries the genetic information from:

A. Nucleus to nucleolus
B. Nucleolus to ribosome
C. DNA to tRNA
D. DNA to ribosome

Q.722 Which one is correct about the following diagram?



A. It is a nucleotide
B. It contains pyrimidine nitrogen
C. It is used to form DNA
D. It is used to form RNA

Q.723 Conjugated molecules are of ____________ significance:

A. Structural significance only
B. Functional significance only
C. Structural and functional significance
D. Has no structural and functional role

Q.724 Which of the following conjugated molecule is incorrectly matched?

A. Lipo-proteins -------- cell membrane
B. Glyco-proteins -------- cell surface antigens/ receptors
C. Glyco-lipids -------- cell wall
D. Nucleic acids -------- chromosomes

Q.725 Coenzymes are mostly derived from:

A. Proteins
B. Carbohydrates
C. Metal ions
D. Vitamins

Q.726 A statement that is not correct about enzymes:

A. They increase the rate of reaction
B. They contaminate end product
C. They lower the activation energy
D. They cannot start chemical reactions

Q.727 It is true for enzymes:

A. Without enzymatic activities, the metabolism is very slow
B. Enzymes initiates the reaction
C. The reactants are substrate and enzyme
D. All enzyme requires co-factor

Q.728 When apoenzyme is separated from its metal component, its activity is:

A. Decreased
B. Lost
C. Increased
D. Remains unaffected

Q.729 It is not true about enzymes:

A. They increase rate of reaction without being used
B. They can change nature of end products
C. They are required in small amount
D. They lower activation energy of reactions

Q.730 Which one of the following enzyme shows the greatest substrate specificity?

A. Lipase
B. Nuclease
C. Pepsin
D. Sucrase

SKN

Q.731 Which one of the following statements about enzymes is/are true?

1. Enzymes are proteins whose three-dimensional shape is key to their function
2. Enzymes speed up reaction by lowering the activation energy
3. Enzymes are highly specific
4. Enzyme activity is affected by the change in temperature and pH

A. All except 2
B. All except 1
C. All except 3
D. All are true

Q.732 All enzymes work best in:

A. Aqueous medium
B. Non-aqueous medium
C. Alcoholic medium
D. Acidic medium

Q.733 The catalytic activity of an enzyme is restricted to a small portion of the structure known as:

A. Active site
B. Binding site
C. Allosteric site
D. Substrate site

Q.734 Which of the following is common between Lock and Key model and Induce Fit model?

A. Enzymes are specific in nature
B. Enzymes are rigid structures showing no change during reaction.
C. Enzymes structure is changed during reaction.
D. Enzyme acts as template.

Q.735 If any factor alters the chemistry and configuration of an enzyme, it will probably be:

A. Temperature
B. pH
C. Inhibitor
D. All A, B, C

Q.736 Optimum pH of catalase is:

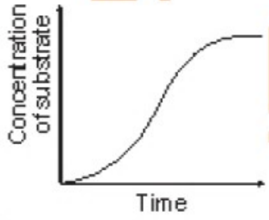
A. 5.50
B. 6.80
C. 7.60
D. 4.50

Q.737 The rate of reaction depends directly on the amount of enzyme present at a specific time at:

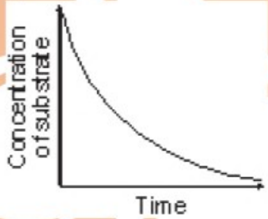
A. Limited substrate concentration
B. Unlimited enzyme concentration
C. Unlimited substrate concentration
D. Limited enzyme concentration

Q.738 Which graph represents the change in substrate concentration during an enzymatically-controlled reaction?

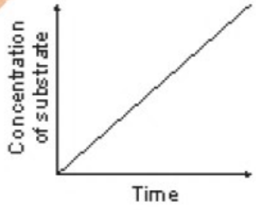
A.



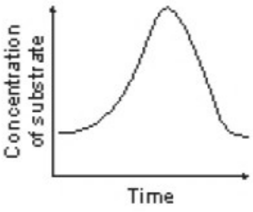
B.



C.



D



Q.739 Which of the followings is never inhibitor?

A. Substrate
B. ATP
C. Product
D. Antibiotic

Q.740 All of the following are examples of enzyme inhibitors except:

A. Cyanides
B. Antibiotics
C. Anti-metabolites
D. Antibodies

Q.741 The activity of some enzymes is controlled by certain molecules binding to some specific area other than active site. This site is called as:

A. Allosteric site
B. Binding site
C. Globular part
D. Catalytic site

Q.742 Precursor activation depends upon:

A. Final product
B. Intermediate substances
C. Initial substrate
D. All A, B, C

Q.743 Amylase is an example of:

A. Ligase
B. Hydrolase
C. Transfers
D. Oxidoreductases

Q.744 The enzyme concerned with transfer of electrons is:

A. Hydrolase

B. Transferase

C. Transaminase

D. Dehydrogenase

Q.745 The percentage of water in bacterial cell is about:

A. 15%

B. 17%

C. 50%

D. 70%

Q.746 The total weight of a mammalian cell, DNA forms:

A. 1%

B. 1.1%

C. 6%

D. 0.25%

Q.747 The amount of heat absorbed when a liquid changes into gas is expressed as calorie per gram vaporized is called:

A. Heat capacity

B. Specific heat

C. Heat of vaporization

D. Latent heat

Q.748 Living organisms use water as thermo-stabilizer, due to its _____ property:

A. Heat of vaporization

B. Heat capacity

C. Heat of sublimation

D. Heat of ionization’

Q.749 Water molecules are bonded to each other by:

A. Hydrogen bonding

B. Covalent bonding

C. Ionic bonding

D. Co-ordinate covalent bonding

Q.750 In straight chain structure of glucose, all carbons contain hydroxyl group except carbon number:

A. 1

B. 3

C. 5

D. 6

Q.751 Ring formed by D-Ribose is:

A. 4 cornered

B. 5 cornered

C. 6 cornered

D. 7 cornered

Q.752 How many oxygen atoms are present in ribofuranose?

A. 12

B. 1

C. 5

D. 6

Q.753 ____________ C in deoxyribose is devoid of ‘OH’ as compared to ribose sugar.

A. 1´

B. 2´

C. 3´

D. 4´

Q.754 Sucrose on hydrolysis yields:

A. Two glucose molecules

B. Glucose & galactose

C. Glucose & fructose

D. Two fructose molecules

Q.755 All of the following are the source of energy for humans except:

A. Lactose

B. Glycogen

C. Cellulose

D. Starch

Q.756 Which of the following is true about branching nature and solubility of amylose and amylopectin in hot water?

	AMYLOSE	AMYLOPECTIN
A	Branched, Soluble	Unbranched, Soluble
B	Unbranched,	Soluble Branched, Insoluble
C	Unbranched,	Insoluble Branched, Soluble
D	Branched, Insoluble	Unbranched, Soluble

Q.757 Common in proteins and nucleic acids is that

A. They are hydrophobic

B. They are large polymers

C. Their structures contain sugars

D. They consist of four basic kinds of subunits

Q.758 During formation of a dipeptide, a water molecule is released. This water takes hydrogen from:

A. NH_2 group of 1st amino acid

B. COOH group of 1st amino acid

C. NH_2 group of 2nd amino acid

D. COOH group of 2nd amino acid

Q.759 Size of protein molecule depends upon all except:

A. Type of amino acids

B. Number of amino acids

C. Size of gene

D. Sequence of amino acids

Q.760 Why do proteins have a buffering effect in cells?

A. They are non-polar
B. They are amphoteric
C. They are a major component of cell surface membranes (plasma membranes)
D. They contain basic amino acids.

Q.761 A sequence of amino acids may end in either an amino group (-NH_2) or a carboxyl group (-COOH). What is the theoretical number of chemically different dipeptides that may be assembled from 20 different amino acids?

A. 40
B. 80
C. 160
D. 400

Q.762 Types of atoms present in one molecule of haemoglobin:

A. 574
B. 10000
C. 20
D. 6

Q.763 Lipids are soluble in all of the following except:

A. Ether
B. Water
C. Alcohol
D. Chloroform

Q.764 In oleic acid, double bond is found between carbon numbers:

A. 1 and 2
B. 6 and 7
C. 9 and 10
D. 17 and 18

Q.765 Acylglycerol is neutral when it contains:

A. 1 fatty acid
B. 3 fatty acids
C. 2 fatty acids
D. 4 fatty acids

Q.766 Carboxylic group is found in:

A. Fatty acids only
B. Amino acids only
C. Fatty acids & amino acids
D. Fatty acids, amino acids & nucleic acids

Q.767 Lipids carrying polarity are:

A. Acylglycerols
B. Phospholipids
C. Waxes
D. Neutral lipids

Q.768 In a typical nucleotide, phosphoric acid is attached to pentose sugar at carbon number:

A. 1
B. 2
C. 3
D. 5

Q.769 Nucleic acids are polymers of:

A. Pentoses
B. Hexoses
C. Nucleosides
D. Nucleotides

Q.770 Number of nitrogen atoms present in adenine:

A. 5
B. 2
C. 7
D. 6

Q.771 A short length of DNA has 80 thymine and 60 guanine bases, the total number of nucleotides in that sample will be:

A. 40
B. 180
C. 280
D. 360

Q.772 If there are 2 thymine bases in one turn of DNA helix, what will be the amount of cytosine in that turn?

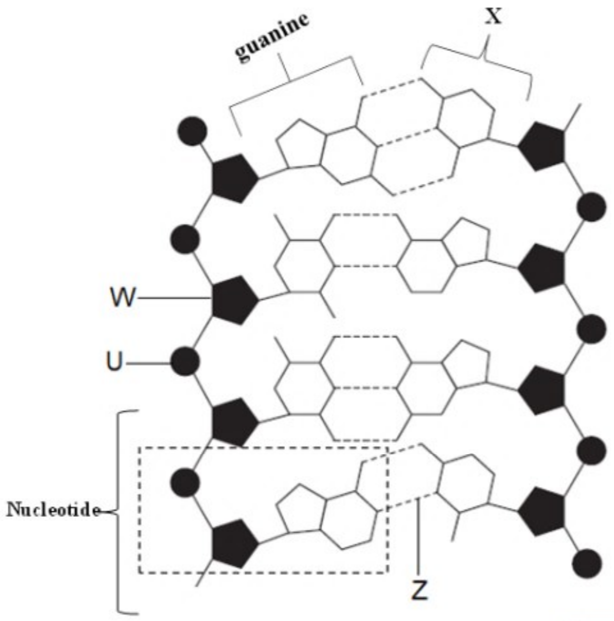
A. 2
B. 8
C. 16
D. Cannot be estimated

Q.773 Phosphodiester linkage is represented by a pair of:

A. O—P—O
B. O—C—O
C. C—P—C
D. P—O—C

SKN

Q.774 Find out the correct identifications of “X”, “W”, “U”, and “Z”:



A. X: Cytosine, W: Pentose sugar, U: Phosphate group, Z: Hydrogen bond
B. X: Cytidine, W: Pentose sugar, U: Phosphate group, Z: Hydrogen bond
C. X: Cytosine, W: Phosphate group, U: Pentose sugar, Z: Hydrogen bond
D. X: Cytidine, W: Hydrogen bond, U: Phosphate group, Z: Pentose sugar

Q.775 Which of the following conjugated molecule is a major constituent of cell membrane?

A. lipo-proteins
B. glyco-proteins
C. glyco-lipids
D. nucleic acids

Q.776 These are the most important group of proteins which are biologically active:

A. Ribozymes
B. Enzymes
C. Hormones
D. Coenzymes

Q.777 Enzymes which are involved in aerobic respiration in plant cell are found in:

A. Chloroplast
B. Mitochondria
C. Cytosol
D. Ribosome

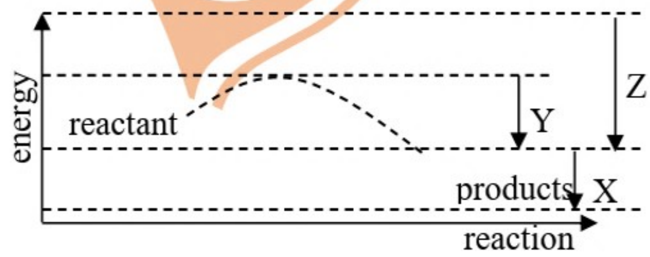
Q.778 Haeme is an example of:

A. Cofactor
B. Activator
C. Coenzyme
D. Prosthetic group

Q.779 Pick the wrong statement regarding co-factor:

A. Essentially required for enzyme functioning if present
B. Acts as enzyme between active site and substrate
C. May provide chemical energy for driving chemical reaction
D. Acts as bridge between enzyme and substrate

Q.780 The diagram illustrates energy changes in an enzyme-controlled reaction:



Which of the following represents the lowering of the activation energy?

A. Y
B. Z + X
C. Z – Y
D. X + Y

Q.781 The charge and shape of the active site is formed by:

A. Cofactor
B. Allosteric site
C. Amino acids
D. Globular shape

Q.782 This is the core of Induce Fit Model which distinguishes it from Lock and Key model:

A. Catalytic nature of enzyme
B. Specificity of enzyme
C. Change in enzyme
D. Change in substrate

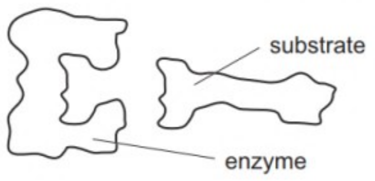
SKN

Q.783 In a normal laboratory reaction, substance A is being converted to substance B. What change will occur in reaction, if we add respective enzyme in it:

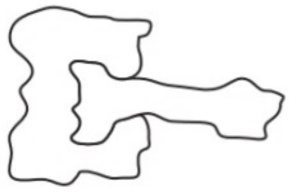
A. A will form C
B. No activation energy will be needed now for reaction
C. Quality of B will be increased
D. Production of B will be increased

Q.784 The diagrams represent an enzyme molecule and its substrate. Which one shows these molecules after they are heated to 100 °C?

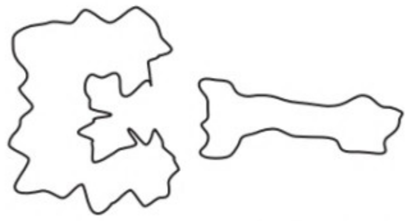
A.



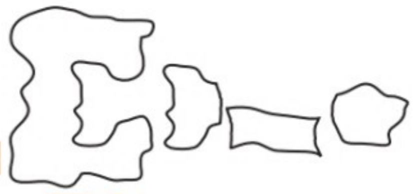
B.



C.



D.

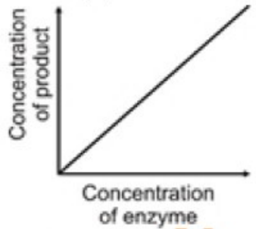


Q.785 An enzyme that requires highly basic pH for its proper functioning is found in:

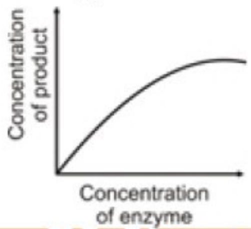
A. Stomach
B. Duodenum
C. Liver
D. Plasma

Q.786 Which graph shows the effect of increasing enzyme concentration on product formation when there is an excess of substrate

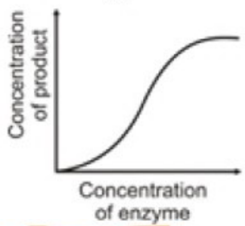
A



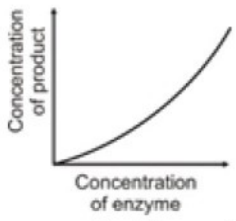
B



C



D



Q.787 After a certain limiting concentration of substrate, increasing the concentration of enzyme two times, rate of reaction will:

A. Increase four times
B. Increase three times
C. Increase two times
D. Remain constant

Q.788 The effect of which one of the following can be reversed by increasing substrate concentration:

A. Un-competitive inhibitor
B. Competitive reversible inhibitor
C. Irreversible inhibitor
D. Non-competitive reversible inhibitor

Q.789 Malonic acid is an example of reversible inhibitor; it inhibits succinic acid dehydrogenase by:

A. Forming weak linkage with active site
B. Forming weak linkage with allosteric site
C. Forming covalent bond with active site
D. Forming covalent bond with allosteric site

Q.790 Any agent which reduces/ slows down or stops the rate of reaction of enzymes is termed as:

A. Inhibitor
B. Repressor
C. Enhancer
D. Activator

Q.791 In an enzyme-controlled chain reaction, if concentration of initial substrate is increased then it will cause:

A. Feedback inhibition
B. Precursor activation
C. End product inhibition
D. Enzyme to enzyme association

Q.792 The enzymes bringing about hydrolysis of esters and peptides are:

A. Lyases
B. Hydrolases
C. Transferases
D. Oxidoreductases

Q.793 Which one in not an example for hydrolase?

A. Amylase
B. Sucrase
C. Dehydrogenase
D. Protease

Q.794 The enzymes catalyzing re-arrangement of atomic grouping without altering molecular weight or number of atoms is:

A. Ligases
B. Isomerases
C. Hydrolases
D. Oxidoreductase

Q.795 Most of water's unique properties result from the fact that water molecules:

A. Are very small
B. Are extremely large
C. Tend to stick together
D. Tend to repel each other

Q.796 Which of the following property of water plays key role in maintaining the integrity of lipid bilayer membrane?

A. Hydrophobic exclusion
B. High polarity
C. Cohesion
D. Lower density

Q.797 Most of the human body structures are formed by compounds that primarily contain

A. Ionic bonds
B. S-S bonds
C. Covalent bonds
D. Hydrogen bonds

Q.798 The major part of dry weight of animal cell is made of:

A. Fats
B. Proteins
C. Carbohydrates
D. Nucleic acids

Q.799 Which of the following is not true?

A. Carbohydrates are used in lipogenesis
B. Carbohydrates are less soluble than fats in water
C. Carbohydrates form a component of nucleic acids
D. Carbohydrates are utilized in the synthesis of amino acids

Q.800 The simple polyhydroxy ketone molecule containing 3-7 carbon atoms is a:

A. Oligosaccharide
B. Polysaccharide
C. Disaccharide
D. Monosaccharide

Q.801 A glucose molecule is to starch as a:

A. Steroid to a lipid
B. Protein to an amino acid
C. Nucleotide to a nucleic acid
D. Nucleic acid to a polypeptide

Q.802 All of the following are composed exclusively of glucose except:

A. Lactose
B. Amylose
C. Maltose
D. Cellulose

Q.803 Which of the following has no free aldehyde or ketone group?

A. Sucrose
B. Lactose
C. Ribulose
D. Galactose

Q.804 Which one of the following glycosidic linkages is found in maltose?

A. β-1,4
B. α-1,4
C. δ-1,4
D. β-4,1

Q.805 Identify a true option with respect to chitin:

Option	Type	Linkage	Monomer	Occurrence
A	Functional	α-1,4 glycosidic	N-acetyl glucosamine	Plant cell wall
B	Functional	β-1,4 glycosidic	N-acetyl muramic acid	Bacterial cell wall
C	**Structural**	**β-1,4 glycosidic**	**N-acetyl glucosamine**	**Fungal cell wall**
D	Structural	α-1,4 glycosidic	N-acetyl muramic acid	Algal cell wall

Q.806 Lipids differ from other large biomolecules in that they:

A. Are much large
B. Are not true polymers
C. Does not contain carbon
D. Do not have specific shapes

Q.807 All of the following statements describing lipids are true except:

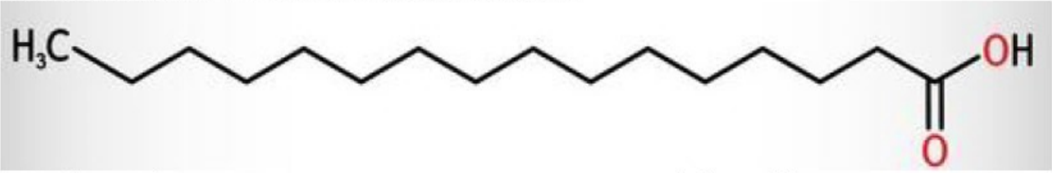
A. They usually associate by covalent interactions
B. They are structural components of membranes
C. They are intracellular energy source
D. They are usually insoluble in water

Q.808 What makes a fatty acid an 'acid'?

A. It does not dissolve in water
B. It contains only two oxygen atoms
C. It is capable of bonding with other molecules to make a fat

D. It has a carboxyl group that donates a H^+ into a solution

Q.809 Given below is the chemical formula of:



A. Glycerol
B. Oleic acid
C. Stearic acid
D. Palmitic acid

Q.810 The most concentrated source of stored energy is a molecule of:

A. Fat
B. Protein
C. Glucose
D. Cellulose

Q.811 Phospholipids are important cell membrane constituents because they:

A. Contain glycerol
B. Form bilayer in water
C. Combine covalently with proteins
D. Contain both polar and non-polar portion

Q.812 Which of the following is polymerized to form proteins?

A. Nucleotides
B. Amino acids
C. Glycerols
D. Muramic acid

Q.813 Which of the following statements is wrong?

A. Uracil is pyrimidine
B. Lactose is a disaccharide
C. Cellulose is a homopolysaccharide
D. Glycine is sulphur containing amino acid

Q.814 The amino acid which gives rise to thyroxin is:

A. Glycine
B. Alanine
C. Tyrosine
D. Tryptophan

Q.815 The differences between one amino acid and another are found in:

A. R-group
B. Amino group
C. Peptide bond
D. Carboxyl group

Q.816 All the following statements about the structure of glycogen are true except:

A. It contains α-1, 4 linkage
B. It contains α-1, 6 linkage
C. It is a copolymer of glucose and galactose
D. Branched chains occur about every ten residues

Q.817 In mammals, carbohydrates are stored as:

A. Glucose in liver
B. Lactic acid in muscles
C. Glucose in liver and spleen
D. Glycogen in liver and muscles

Q.818 Iodine test is used to detect the presence of:

A. Monosaccharides
B. Oligosaccharides
C. Disaccharides
D. Polysaccharides

Q.819 A peptide bond formation between two amino acids is accompanied by the:

A. Deamination
B. Loss of water
C. Decarboxylation
D. Addition of water

Q.820 Which of the following ranks the molecules in a correct order by size?

A. Protein → Water → Glucose → sucrose
B. Water → protein → sucrose → glucose
C. Protein → sucrose → glucose → water
D. Water → sucrose → glucose → protein

Q.821 Which chemical characteristic is not common to all living beings?

A. Similar triplet code for amino acids
B. Types of proteins present in the body
C. Ribosomes are sites of protein synthesis
D. Energy is stored in high phosphate bonds

Q.822 The primary structure of a protein:

A. Is a α-helix in most proteins
B. Is determined by its secondary structure
C. Is determined by hydrogen bonds that link amino acids to each other
D. Is the unique sequence of amino acids that are linked by peptide bonds

SKN

Q.823 Which one of the following is not a fibrillar protein?
A. Elastin
B. Myosin
C. Keratin
D. Myoglobin

Q.824 Which one of the following is a simple protein?
A. Albumin
B. Lipoprotein
C. Glycoprotein
D. Nucleoprotein

Q.825 Which of the following classes of biomolecules are known to have catalytic activity?
A. Proteins and RNA
B. Proteins and lipids
C. Carbohydrates and lipids
D. Proteins and carbohydrates

Q.826 Unlike DNA, an RNA molecule:
A. Forms a gene
B. Is a single stranded
C. Does not contain pentose sugar
D. Does not contain sugar-phosphate backbone

Q.827 The carbon atoms of the pentose sugar involved in phosphodiester bond formation in RNA are:
A. C1 and C5
B. C3 and C5
C. C2 and C5
D. C4 and C5

Q.828 Adenine of tRNA pairs with ___________ of mRNA.
A. Cytosine
B. Uracil
C. Thymine
D. Guanine

Q.829 The RNA that picks up specific amino acid from amino acid pool in the cytoplasm to ribosome during protein synthesis is called:
A. rRNA
B. tRNA
C. mRNA
D. siRNA

Q.830 Enzymes differ from inorganic catalysts in:
A. Having high diffusion rate
B. Working at high temperature
C. Being proteinaceous in nature
D. Not being used up in the reaction

Q.831 What is common among amylase, rennin and trypsin?
A. All these are proteins
B. These act at pH lower than 7
C. These are produce in stomach
D. These all are proteolytic enzymes

Q.832 Identify the true option from the following:
A. Coenzymes = Holoenzyme + Apoenzyme
B. Holoenzymes = Coenzyme +Apoenzymes
C. Apoenzyme = Holoenzyme + Exoenzyme
D. Holoenzyme = Apoenzyme + Endoenzyme

Q.833 The major role of minor elements inside the living organisms is to act as:
A. Cofactor of enzymes
B. Binding of cell structures
C. Constituents of hormones
D. Building blocks of essential amino acids

Q.834 Inactive zymogens are precursors of all the following gastrointestinal enzymes except:
A. Pepsin
B. Trypsin
C. Ribonulease
D. Chymotrypsin

Q.835 Enzymes generally have:
A. Same pH and temperature optima
B. Different pH but same temperature optima
C. Same pH but different temperature optima
D. Different pH and different temperature optima

Q.836 A protein having both structural and enzymatic traits is:
A. Actin
B. Trypsin
C. Myosin
D. Collagen

Q.837 Genetic engineering requires:
A. Lipase
B. DNase
C. Amylase
D. Restriction endonuclease

Q.838 Which of the following is the most abundant enzyme in nature?
A. Protease
B. Amylase
C. Rubisco
D. Arginase

SKN

Q.839 Extreme change in pH causes denaturation of enzyme by breaking:
A. Peptide bonds B. Covalent bonds
C. S−S bonds **D. Ionic bonds**

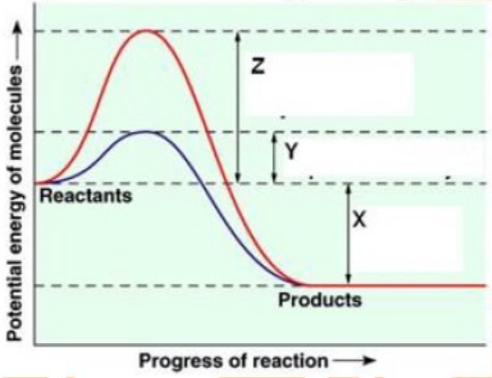
Q.840 Enzyme inhibition caused by a substrate resembling structural molecule is:
A. Feedback inhibition B. Allosteric inhibition
C. Competitive inhibition D. Non-competitive inhibition

Q.841 Which is a typical example of 'feedback inhibition'?
A. Cyanide and cytochrome reaction
B. Sulpha drugs and folic acid synthesizer bacteria
C. Allosteric inhibition of phosphofructokinase by ATP
D. Reaction between succinic dehydrogenase and succinic acid

Q.842 In an amino acid, α-carbon is covalently bonded to both an amino group and a carboxyl group. When placed in water it:
A. Would function only as an acid because of the carboxyl group
B. Would function only as a base because of the amino group
C. Would function as neither an acid nor a base
D. Would function as both an acid and a base

Q.843 How many molecules of water are needed to completely hydrolyze a polymer that is 11 monomers long?
A. 12 B. 11
C. 10 D. 9

Q.844 The diagram illustrates energy changes in an enzyme-controlled reaction.



Which of the following represents the lowering of the activation energy?
A. X+Z B. Y−X
C. X+Y D. Z−Y

Q.845 Competitive inhibition of enzyme is shown in:
I. Succinate dehydrogenase by malonate
II. Cytochrome oxidase by cyanide
III. Hexokinase by glucose 6 phosphate
A. I only B. II only
C. III only D. A, B and C

Q.846 The enzyme except its coenzyme is:
A. Cofactor B. Coenzyme
C. Apoenzyme D. Holoenzyme

Q.847 Situation: Addition of more substrate to already occurring chemical reaction.
Effect: It shows no effect on rate of reaction.
This condition is generally known as:
A. Enzyme inhibition B. Catalysis of enzyme
C. Saturation D. Denaturation

Q.848 Find the right choice about enzymes.
I) They are protein and two-dimensional structure is important part for their action.
II) They accelerate rate of reaction by increasing energy of activation.
III) They are larger in size than substrate.
A. I only B. II only
C. III only D. I, II and III are correct

Q.849 The inhibition of enzyme activity by blocking active site is called as:
A. Non-competitive inhibition B. Allosteric inhibition
C. Competitive inhibition D. Irreversible inhibition

SKN

Q.850 Extreme change in pH results in:
A. Activation of enzyme
B. Denaturation of enzyme
C. Decomposition of enzyme
D. All of these

Q.851 Enzymes are highly specific in nature, how?
I) They show their action on specific substrates.
II) They have specific chemical organization.
III) They have particular shape.
A. I only
B. II only
C. III only
D. I, II and III

Q.852 According to Emil Fischer model of enzyme action:
A. Active site is flexible.
B. Active site is rigid.
C. Active site is smooth and plain.
D. Both A and B

Q.853 Vitamins are important raw materials for:
A. Synthesis of cofactors
B. Synthesis of activators
C. Synthesis of prosthetic groups
D. Synthesis of coenzymes

Q.854 The final product in a series of reactions inhibits an enzyme from an earlier step in the sequence; it is an example of:
A. Negative feedback
B. Positive feedback
C. Either A or B
D. Enzyme destruction

Q.855 Generally, competitive inhibitors are:
A. Unlike to substrate
B. Different from substrate
C. Similar to substrate
D. A, B and C

Q.856 Sulphonamide antibiotics used to combat bacterial infection; such drugs act as:
A. Enzymes
B. Substrates
C. Inhibitors
D. A and B

Q.857 All of the following are the characteristics of enzyme except:
I) They increase the rate of reaction.
II) They are consumed during chemical reaction.
III) They are proteineous in nature.
A. I only
B. II only
C. III only
D. I, II and III are correct

Q.858 Observe the below metabolic pathway and answer accordingly.

$$F \xrightarrow{\text{Enzyme}-1} G \xrightarrow{\text{Enzyme}-2} H \xrightarrow{\text{Enzyme}-3} I \xrightarrow{\text{Enzyme}-4} J$$

If enzyme no.1 is absent:
A. The rate of production of J is will be increased.
B. The rate of production of J is will be decreased
C. The rate of production of J is will be stopped.
D. The rate of production of F is decreased.

Q.859 The bonds which are sensitive to temperature change are:
A. Peptide bond
B. Disulphide bonds
C. Hydrogen bonds
D. None of these

Q.860 The activity of almost every enzyme in a cell can be regulated by:
A. Its enzyme
B. Its substrate
C. Its product
D. Either A, B or C

Q.861 Which one of the following can destroy enzyme by altering its shape?
A. Reversible non-competitive enzyme inhibition
B. Irreversible non-competitive enzyme inhibition
C. Both A and B
D. None of these

Q.862 An inactivated enzyme (upon low temp.) regains its catabolic influence by increasing the temperature; this temperature is called as:
A. Maximum temperature
B. Minimum temperature
C. Optimum temperature
D. Lower temperature

Q.863 Thiol is =
A. –CH group
B. –OH group
C. $-NH_2$ group
D. None of these

Q.864 Competitive inhibition is usually:
A. Permanent
B. Temporary
C. Cannot stop substrate to bind active site
D. None of these

Q.865 The molecular structure of enzyme that is necessary for enzyme activity is:
A. Tertiary structure
B. Primary structure
C. Secondary structure
D. Either B or C

Q.866 When disulfide bridges in an enzyme break:
A. The enzyme becomes denatured
B. The enzyme becomes renatured
C. The enzyme becomes active
D. None of these

Q.867 Identify the competitive inhibitor(s).
A. Malonic acid
B. Cyanide
C. Hg
D. All of these

Q.868 Which one of the following can inhibit the activity of cytochrome oxidase?
A. Cyanide
B. Hg^+
C. Ag^+
All of these

Q.869 When the activity of an enzyme is inhibited by its own product, it is known as:
A. Enzyme deactivation
B. Enzyme denaturation
C. Feedback inhibition
D. Positive feedback

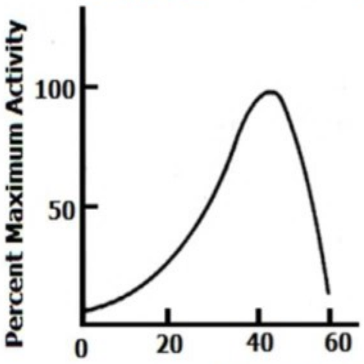
Q.870 According to lock and Model of enzyme action, the active site of enzyme has:
A. Indefinite shape and rigid structure
B. Indefinite shape and soft structure
C. Definite shape and soft structure
D. Definite shape and rigid structure

Q.871 By increasing the concentration of enzyme, numbers of __________so more products are formed.
A. Active sites become less available
B. Active sites become more available
C. Either A or B
D. None of these

Q.872 After a certain point, an increase in temperature causes:
A. A decrease in the reaction rate
B. A increase in the reaction rate
C. Either Both A and B
D. None of these

Q.873 Identify the function(s) of carbonic anhydrase.
I) It can regulate the formation of H_2CO_3 in blood.
II) It can add O_2 to haemoglobin.
III) It can regulate the formation of HCO_3 in blood.
A. I only
B. II only
C. III only
D. I, II and III

Q.874 Observe the below graph showing enzyme activity. Answer correctly about X-axis?



A. Effect of substrate concentration
B. Effect of enzyme concentration
C. Both A and B
D. None of these

Q.875 Enzymes can carry out one particular function; this statement is related to:
A. Induced fit model
B. Lock and Key model
C. Both A and B
D. Enzyme inhibition

Q.876 Identify the allosteric enzyme among following enzymes?
A. Urease
B. Hexokinase
C. Maltase
D. None, as all of these are non-regulatory enzymes

Q.877 The pH resulting in maximal activity of a particular enzyme is known as:
A. Maximum pH
B. Minimum pH
C. Optimum pH
D. Hyper pH

Q.878 A competitive inhibitor competes with the substrate:
A. To occupy the active site
B. To occupy the allosteric site
C. To occupy the both active and allosteric sites
D. To increase the product

Q.879 The rate of enzyme-catalysed reactions increases as temperatures increase, this occurs only up to a point; and at high temperatures:

A. Enzymes start to renature
B. Enzymes start to denature
C. Enzymes start to active
D. Enzymes start to increase product

Q.880 The phenomenon in which enzyme fails to catalyze a reaction is called:

A. Enzyme activation
B. Energy of deactivation
C. Enzyme inhibition
D. Enzyme denaturation

Q.881 Heavy metal mercury can break:

A. Disulphide bridges of substrate
B. Disulphide bridges of enzyme
C. Disulphide bridges of both enzyme and substrate
D. Peptide bonds of enzyme

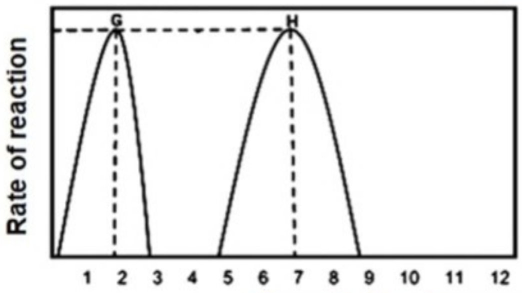
Q.882 The conversion of amino acid aspartate into threonine requires how many enzymatic reactions?

A. 1 enzymatic reaction
B. 2 enzymatic reactions
C. 4 enzymatic reactions
D. 5 enzymatic reactions

Q.883 In competitive inhibition, if the concentration of the substrate is increased sufficiently then:

A. Substrate will out-compete the inhibitor
B. Substrate will increase the inhibitor
C. Substrate will compete the inhibitor
D. None of these

Q.884 The activity of two enzymes has been represented in below graph. The labeled parts 'G' & 'H' show:



A. Effect of substrate concentration
B. Effect of enzyme concentration
C. Effect of pH concentration
D. Effect of temperature concentration

Q.885 What is untrue about enzymes?

I) Enzymes may be used many times for particular reaction.
II) Enzymes provide energy of activation for chemical reaction to occur.
III) The activity of enzymes can be regulated.

A. I only
B. II only
C. III only
D. I, II and III are true

Q.886 In enzyme terminology, mostly the suffix for enzyme is represented by:

A. -ase
B. -ose
C. -sin
D. -gen

Q.887 Rate of enzyme reaction is:

A. Affected by temperature
B. Affected by concentration of enzyme and substrate
C. Affected by inhibitors
D. All of these

Q.888 The suitable term used for the chemical that an enzyme works on is known its:

A. Substrate
B. Product
C. Complex
D. Inhibitor

Q.889 What is the optimum temperature for thermophilic bacteria?

A. –10°C
B. 37°C
C. 70°C
D. 120°C

Q.890 Enzyme substrate complex is formed by the attraction of:

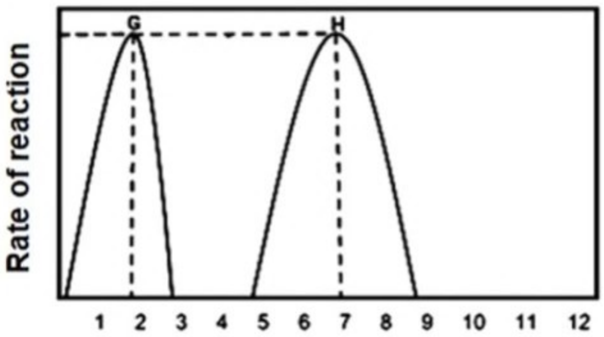
A. Enzyme and product
B. Substrate and inhibitor
C. Enzyme and substrate
D. Enzyme and Inhibitor

Q.891 In a metabolic pathway of conversion of threonine into isoleucine, isoleucine can bind to an allosteric site on first enzyme (threonine deaminase) therefore:

A. Isoleucine plays role as a competitive inhibitor
B. Isoleucine plays role as a non-competitive inhibitor
C. Threonine plays role as a non-competitive inhibitor

D. None of these

Q.892 The activity of two enzymes has been represented in below graph. The labeled parts 'G' indicates:



A. Protein B. Trypsin
C. Lipase D. Pepsin

Q.893 Enzyme succinate dehydrogenase converts:

A. Succinate into Malate B. Fumarate into Succinate
C. Malate into Succinate D. Succinate into Fumarate

Q.894 For a protein molecule consisting of 300 amino acids, the mRNA will have the length of:

A. 100 nucleotides B. 300 nucleotides
C. 600 nucleotides D. 900 nucleotides

Q.895 Codons are the triplets of nucleotides:

A. Along the length of mRNA B. Along the length of tRNA
C. Along the length of rRNA D. All of these

Q.896 How many loops are there in tRNA?

A. 1 loop B. 2 loops
C. 3 loops D. 4 loops

Q.897 ACC nucleotide sequence is found at:

A. 5' of tRNA B. 3' of DNA
C. 3' of tRNA D. 5' of DNA

Q.898 What is true about RNA molecules?
I) They are generally single-stranded.
II) They contain A, T, C & G bases
III) They are polymers of nucleotides.

A. I only B. II and III
C. I and III D. I, II and III

Q.899 What is the proportion of rRNA in total RNA contents?

A. 10% of the total RNA in a cell B. 40 to 4% of the total RNA in a cell
C. 50% of the total RNA in a cell D. 80% of the total RNA in a cell

Q.900 Which type of RNA is the smallest among the types of RNA?

A. mRNA B. tRNA
C. rRNA D. Either A or B

Q.901 Which one of the following recognizes specific place on ribosomes for binding during protein synthesis?

A. θ-Loop B. D-Loop
C. Middle loop D. Either A or B

Q.902 Which type of RNA is the smallest among the types of RNA?

A. mRNA B. tRNA
C. rRNA D. Either A or B

Q.903 During the process of protein synthesis, which type of RNA molecule picks amino acids from cytoplasm to ribosomes?

A. mRNA B. tRNA
C. rRNA D. Either A or B

Q.904 The middle loop of tRNA consists of how many bases?

A. 3 bases B. 4 bases
C. 7 bases D. 9 bases

Q.905 The type(s) of RNA that provide(s) platform for protein synthesis is/are:

A. mRNA B. tRNA
C. rRNA D. Either A or B

Q.906 A flat, clover-shaped RNA molecule is:

A. mRNA
B. tRNA
C. rRNA
D. Either A or B

Q.907 Lipoprotein molecules are not found in:

A. Blood
B. Egg yolk
C. Myelin sheath of neuron
D. None, as it is found in A, B and C

Q.908 White matter of brain consists of:

A. Nucleoproteins
B. Lipoprotein
C. Glycolipids
D. Glycoproteins

Q.909 Electron transport chain (ETC) in mitochondria contain large amount of:

A. Nucleoproteins
B. Lipoprotein
C. Glycolipids
D. Glycoprotein

Q.910 The conjugated molecules, mucoids are composed of:

A. Protein + Carbohydrates
B. Lipids + Carbohydrates
C. Protein + Lipids
D. Nucleic acid + Protein

Q.911 Which one of the following is categorized as glycoprotein?

A. LDL
B. Gonadotropic hormone
C. Myelin sheath
D. None of these

Q.912 In glycoprotein molecule, carbohydrate part belongs to:

A. Monosaccharide
B. Oligosaccharide
C. Both A and B
D. Chitin

Q.913 Starch is a type of polymer; its monomers are:

A. α-glucose
B. β-glucose
C. N-acetyl glucosamine
D. Both A and B

Q.914 Lecithin is also known as:

A. Phosphoric acid
B. Phosphate group
C. Phosphatidylcholine
D. Either A, B or C

Q.915 Find the untrue statement.

A. Thymine is purine base.
B. Maltose is a diasaccharide.
C. Haemoglobin is a quaternary structure of protein.
D. All of these are true statements.

Q.916 Nucleoproteins consist of:

A. Carbohydrate + Nucleic acids
B. Carbohydrate + Proteins
C. Basic proteins + Nucleic acids
D. Nucleic acids + acidic proteins

Q.917 Tertiary structure of proteins has:

A. Linear structure
B. 2-D structure
C. Coiled structure
D. Globular-shaped structure
E. None of these

Q.918 What is the number of carbon atoms in fatty acid palmitic acid?

A. 10 C
B. 14 C
C. 16 C
D. 18 C

Q.919 Each pentose or hexose molecule in ring structure exists in:

A. α-form only
B. β-form only
C. Either A or B
D. None of these

Q.920 Triglycerides are also known as:

A. Steroids
B. Cholesterols
C. Terpenes
D. Neutral lipids

Q.921 The most abundant lipid in living things is:

A. Natural waxes
B. Lecithin
C. Cholesterol
D. Acylglycerol
E. None of these

Q.922 All of the following are fibrous proteins except:

A. Antibodies
B. Myosin
C. Keratin
D. Collagen
E. None, as A, B, C and D are fibrous proteins

SKN

Q.923 Find the true statement(s) about glycogen.
I. It is composed of α-glucoses.
II. It is a heteropolysaccharide.
III. Its structure resembles with amylopectin starch.
A. I only
B. II only
C. III only
D. II and III
E. I, II and III are true.

Q.924 The specific sequence of amino acids in a polypeptide is determined by the:
A. Sequence of nucleotide in DNA
B. Sequence of nucleotide in rRNA
C. Sequence of nucleotide in tRNA
D. All of these

Q.925 The compounds that form 'skeleton' of fats and oils:
A. Glycerol
B. Glucose
C. Wax
D. None of these

Q.926 The most abundant type of RNA found in the cell is:
A. Mrna
B. rRNA
C. tRNA
D. ssRNA

Q.927 Which one of the following has important role as intermediates in bacterial photosynthesis?
A. Triose
B. Tetrose
C. Pentose
D. Heptose
E. Either B or D

Q.928 What is the melting point of linoleic fatty acid?
A. -5 ºC
B. 4 ºC
C. 70 ºC
D. 63 ºC

Q.929 In certain protein structures, the α-helix also exists. It is:
A. Flattened in shape
B. Helical in shape
C. 3-D in nature
D. Either A or B
E. None of these

Q.930 Glycerol is:
A. Dihydroxy alcohol
B. Trihydroxy alcohol
C. Tetrahydroxy alcohol
D. Hexahydroxy alcohol

Q.931 The variable in an amino acid is:
A. Amino group
B. Carboxylic group
C. Hydrogen group
D. R-group
E. Either C or D

Q.932 Monosaccharides have:
A. Carbonyl group
B. Hydroxyl group
C. Carboxylic group
D. A and B
E. None of these

Q.933 Starch is digested in:
I. Stomach II. Oral cavity III. Small intestine
A. I only
B. II only
C. III only
D. II and III
E. I, II and III

Q.934 A tripeptide is a product of:
A. 9 amino acids
B. 6 amino acids
C. 3 amino acids
D. 2 amino acids

Q.935 Glycylalanine is an example of:
A. An amino acid
B. Dipeptide
C. Tripeptide
D. Polypeptide

Q.936 The length of mRNA depends upon the size of the:
A. Gene
B. Protein for which it is taking message
C. Both A and B
D. None of these

Q.937 In a phospholipid molecule Phosphate group is esterified with ___F___ of __G__.

Option	F	G
A.	1st OH group	Glycerol
B.	3rd Glycerol	Fatty acid
C.	3rd OH group	Glycerol
D.	2nd OH group	Glycerol

SKN

Q.938 Find the substances possessing peptide linkage and glycosidic linkage respectively.
A. Phospholipid; Glycogen
B. Starch; Cholesterol
C. Triglycerides; Cellulose
D. Glucagon; Lactose
E. None of these

Q.939 Generally fat molecule is composed of:
A. 3 fatty acids + 3 glycerols
B. 1 fatty acids + 1 glycerol
C. 1 fatty acids + 2 glycerols
D. 3 fatty acids + 1 glycerol
E. 2 fatty acids + 2 glycerols

Q.940 Find the odd one out. (regarding polymeric component)
A. Proteins
B. Lipids
C. Nucleic acids
D. Polysaccharides

Q.941 Receptor proteins are generally:
A. Glycolipid in nature
B. Lipoprotein in nature
C. Glycoprotein in nature
D. Nucleoprotein in nature

Q.942 The exoskeleton of arthropods is composed of chitin; it is synthesized by:
A. Hydrolysis of N-acetyl glucosamine
B. Polymerization of glucose
C. Polymerization of amino acids
D. Polymerization of N-acetyl glucosamine
D. Polymerization of fatty acids

Q.943 Conjugated molecules are of:
A. 2 types
B. 3 types
C. 4 types
D. 5 types

Q.944 Which one of the following is a carbohydrate?
A. Protease
B. Cellulase
C. Glycine
D. None of these is a carbohydrate

Q.945 Which type(s) of RNA provide(s) platform for the synthesis of protein?
A. mRNA
B. tRNA
C. rRNA
D. Either A, B or C
E. Either B or D

Q.946 A fatty acid contains one carboxylic acid group attached to a:
A. Amino group
B. Hydrocarbon
C. α-Carbon
D. None of these

Q.947 Candles are made from:
A. Natural waxes
B. Lecithin
C. Cholesterol
D. Acylglycerol
E. None of these

Q.948 __________ help(s) to form tertiary structure of proteins.
A. Disulfide bridges
B. Ionic bonds
C. Glycosidic bonds
D. A and B
E. A, B and C

Q.949 The β-1, 4-Glycosidic linkage is present between:
A. α-galactose + β-glucose
B. β-galactose + β-glucose
C. α-galactose + α-glucose
D. 3 fatty acids + 1 glycerol
E. β-galactose + α-glucose

Q.950 Sickle cell anaemia is a severe hereditary disorder in which glutamic acid is replaced by valine in haemoglobin molecule at the:
A. Position no.4 in β-chain
B. Position no.6 in α-chain
C. Position no.6 in β-chain
D. Position no.4 in α-chain

Q.951 The molecules that have the same molecular formula and differ only in how atoms are arranged in 3D space are known as:
A. Polymers
B. Stereoisomers
C. Isomers
D. Heteropolymers
E. None of these

Q.952 During their function, globular proteins exist in:
A. Secondary structure
B. Tertiary structure
C. Quaternary structure
D. Either B or C
E. A, B and C

Q.953 The most abundant carbohydrate on the earth is:
A. Glycogen
B. Starch
C. Cellulose
D. Chitin

SKN

Q.954 Generally lipids are related to:
I. Hormones **II. Enzymes**
III. Cell membrane **IV. Cell wall**
A. I and II B. I and III
C. II and IV D. II and III
E. I, II, III and IV

Q.955 The chemical nature of lecithin is:
A. Phosphoprotein B. Cholesterol
C. Triglyceride D. Phospholipid
E. None of these

Q.956 Which type of bond is present between the components of maltose sugar?
A. β-1, 4-glycosidic linkage B. α-2, 3-glycosidic linkage
C. α-1, 4-glycosidic linkage D. β-1, 2-glycosidic linkage

Q.957 Support for tendons and ligament is provided by:
A. Keratin B. Histone
C. Collagen D. Elastin

Q.958 How many different types of fatty acids are there?
A. 10 types B. 20 types
C. 30 types D. 40 types
E. 50 types

Q.959 In certain proteins, the _____ folds again and again to form tertiary structure.
A. α-helix B. β-helix
C. Both A and B D. None of these

Q.960 Monosaccharides are generally found in:
A. Open chain structure in globular form B. Ring chain structure in globular form
C. Open chain structure in crystalline form D. Ring chain structure in crystalline form

Q.961 The 'transport disaccharide' in plants is:
A. Starch B. Glucose
C. Maltose D. Sucrose

Q.962 Carbohydrates are commonly called as sugars because:
A. They are composed of C, H and O.
B. They are organic molecules.
C. More familiar carbohydrates have sweet taste.
D. All of these

Q.963 The amino end of dipeptide is also called as:
A. N-terminal B. C-terminal
C. Carboxylic acid terminal D. Either A or B

Q.964 All of the following are conjugated proteins except:
A. Lipoproteins B. Glycoproteins
C. Peptones D. Nucleoproteins
E. None, as all of these are conjugated proteins

Q.965 What is correct option about tRNA?
I. It consists of 55 to 70 nucleotides.
II. Its cloverleaf shape in 2-D views.
III. Its 5' end always terminates in guanine.
IV. It is single-stranded molecule.
A. I and II B. I and IV
C. II and III D. I, II, III and IV

Q.966 Water works as 'temperature regulator' for organisms because of:
A. Cohesion property of water molecule
B. Adhesion property of water molecule
C. High specific heat capacity of water molecule
D. A and B
E. A, B and C

Q.967 Find the true statement(s) about unsaturated fatty acids.
I. Completely saturated with hydrogen.
II. More common in plants.
III. Higher melting point
A. I only B. II only
C. III only D. I and III

E. None, as I, II and III are true statements

Q.968 Ethanolamine is a ____ and inositol is _____ .

A. An amino alcohol; An amino acid, respectively.
B. An amino alcohol; An amino alcohol, respectively.
C. An amino acid; An amino alcohol, respectively.
D. An amino alcohol; A nitrogenous base, respectively.

Q.969 A diglyceride molecule consists of:

A. 2 fatty acids + 2 Glycerol
B. 2 fatty acids + 1 Glycerol
C. 1 fatty acids + 2 Glycerol
D. 1 fatty acids + 1 Glycerol

Q.970 There are different structures of proteins; the primary structure of protein is related to:

A. Hydrogen bonding
B. Amide bonding
C. Disulfide bonds
D. All of these

Q.971 All of the following are the functions of proteins except:

(1) Assist in food digestion
(2) Assist in oxygen transport
(3) Carry genetic information
(4) Fight against the invading pathogens

A. 1
B. 2
C. 3
D. 4
E. 1, 2, 3 and 4 are the functions of proteins

Q.972 Amylopectin is ______ and amylose is ______respectively.

A. Branched structure; Branched structure
B. Unbranched structure; Unbranched structure
C. Branched structure; Unbranched structure
D. Unbranched structure; Branched structure

Q.973 Menthol is an example of:

A. Monoterpene
B. Diterpene
C. Triterpene
D. Polyterpene

Q.974 Biomolecules having phosphodiester bonds are:

A. Starch
B. Protein
C. Nucleic acid
D. Triglycerol
E. None of these

Q.975 The food products that are rich in protein contents are:

A. Eggs
B. Butter
C. Honey
D. Milk
E. B and C

Q.976 The quaternary structure of proteins have more than one globules attached together by:

A. Hydrogen bonding
B. Hydrophilic interactions
C. Disulfide bridges
D. Hydrophobic interactions

Q.977 Sickle cell anaemia is a serious disorder; it is caused due to abnormality in:

A. Lipid
B. Carbohydrate
C. Protein
D. All of these

Q.978 Waxes are generally esters of:

A. Long chain fatty acids + Short chain alcohols
B. Short chain fatty acids + Long chain alcohols
C. Long chain fatty acids + Long chain alcohols
D. Short chain fatty acids + Short chain alcohols

Q.979 Oligosaccharides consist of derivatives of:

A. Disaccharides
B. Disaccharides
C. Monosaccharides
D. Dextrins
E. Either B or D

Q.980 Presence of starch in given sample can be confirmed by:

A. Benedict's test
B. Ethanol test
Structure of protein

Q.981 β-pleated sheets are found in:

A. Primary structure of proteins
B. Secondary structure of proteins
C. Tertiary structure of proteins
D. Quaternary structure of proteins
E. All of these

Q.982 Saturated fats:

A. Possess many double bonds
B. Appears oily
C. Possess no double bonds
D. Water soluble in nature

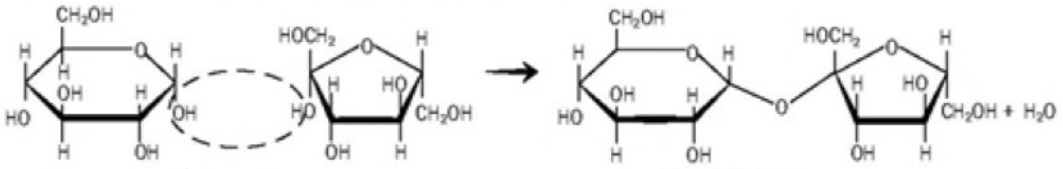
Q.983 Hydrophobic interactions play key role in:

A. Maintaining integrity of lipid bilayer membranes
B. Temperature stabilizer
C. Cooling effect
D. Bringing about chemical reactions

Q.984 $C_x(H_2O)_y$ is applicable to all except:

A. Cellulose
B. Chitin
C. Starch
D. Glycogen

Q.985 A carbohydrate formation is shown in following diagram. Name the components that are involved in this molecule formation:



A. Glucose, glucose
B. Fructose, glucose
C. Fructose, galactose
D. Glucose, fructose

Q.986 It shows wrong information about polysaccharides:

	Amylose	**Amylopectin**	**Glycogen**	**Cellulose**	**Chitin**
A.	α 1, 4 glycosidic linkages	Produces galactose on hydrolysis	Branched	Most abundant carbohydrate	Nitrogen containing carbohydrate
B.	Blue color with iodine	α 1, 4 and α 1, 6 glycosidic linkages	Animal's starch	Cotton pure form	β 1, 4 glycosidic linkages
C.	Unbranched	Soluble in hot water	α 1, 4 and α 1, 6 glycosidic linkages	Unbranched	N-acetyl glucosamine
D.	Insoluble in water	Branched	Produces galactose on hydrolysis	β 1, 4 glycosidic linkages	Unbranched

Q.987 $C_2H_5NO_2$ represent:

A. Glycine
B. Alanine
C. Tryptophan
D. Cysteine

Q.988 Ionic bonding would be present in:

A. Primary structure of proteins
B. Secondary structure of proteins
C. Tertiary structure of proteins
D. All A, B, C

Q.989 Out of the following which is elastic?

A. G actin
B. Collagen
C. Myoglobin
D. Carbonic anhydrase

Q.990 An organic compound that belongs to Lipids:

A. $C_{18}H_{32}O_{16}$
B. $C_{57}H_{110}O_6$
C. $C_{30}0H_{500}O_{250}$
D. $C_{42}H_{85}O_{23}N_{17}S$

Q.991 It is precursor of bile acids:

A. Waxes
B. Phospholipids
C. Steroids
D. Acylglycerols

Q.992 Smallest type of RNA:

A. rDNA
B. rRNA
C. mRNA
D. Trna

Q.993 All of the followings are related to conjugated proteins except:

A. Cell Wall
B. Hormones
C. Blood antigens
D. Receptors

Q.994 It is not thermolabile:

A. Taq polymerase
B. EcoR1
C. Hexokinase
D. RuBisCo

Q.995 A protease is:

A. Lipase
B. Rennin
C. Sucrase
D. Amylase

Q.996 Pick a prosthetic group:

A. Heme in cytochromes
B. Magnesium in PCR reaction for Polymerase
C. Chloride ion in saliva for amylase
D. NAD^+ in Krebs cycle

Q.997 Enzymes which require optimum temperature to be lower than 37° C for their proper functioning are present in:

A. Liver
B. Testes
C. Kidney
D. Stomach

Q.998 In glycolysis, glucose is converted into fructose. This is accomplished by:

A. Ligase
B. Hydrogenase
C. Deaminase
D. Isomerase

Q.999 A carbohydrate that is the primary source of energy for our cells:

A. ATP
B. Glucose
C. Starch
D. Sucrose

Q.1000 Penicillin is an antibiotic, that inhibits bacterial growth. It is categorized as:

A. Irreversible competitive inhibitor
B. Reversible competitive inhibitor
C. Reversible non-competitive inhibitors
D. Irreversible non-competitive inhibitor

Q.1001 All are characteristics of monosaccharides except:

A. All carbons contain OH except carbonyl carbon
B. Digestion by amylase enzyme
C. Primary product of photosynthesis
D. Very simple and very sweet in taste

Q.1002 Which of the following sugars are component of nucleic acid?

A. Tetroses
B. Trioses
C. Pentoses
D. Hexoses

Q.1003 How many carbons are present in ring of glucopyranose?

A. 5
B. 3
C. 4
D. 6

Q.1004 Select correct option from the following:

	Reducing monosaccharide	Reducing Disaccharides	Non-Reducing Disaccharides	Non-Reducing monosaccharides
A.	Glucose	Sucrose	Maltose	Ribulose
B.	Glucose	Lactose	Sucrose	Ribulose
C.	Ribulose	Maltose	Sucrose	None
D.	Fructose	Sucrose	Maltose	None

Q.1005 It is produced during hydrolysis of starch in alimentary canal:

A. Amylase
B. Lactose
C. Amylose
D. Maltose

Q.1006 Which of the followings statement is correct?

A. All enzymes in human body work at same temperature but different pH
B. All enzymes in human body work at different temperature but same pH
C. All enzymes in human body work at same temperature and same pH
D. All enzymes in human body work at different temperature and different pH

Q.1007 Most abundant protein in human body:

A. Trypsin
B. Hemoglobin
C. Collagen
D. Insulin

Q.1008 All of the following bonds are covalent in nature except:

A. Peptide
B. Phosphodiester bond
C. Glycosidic
D. Hydrogen bond

Q.1009 An increase in temperature beyond optimum will:

A. Increase the rate of reaction
B. Increase or decrease the rate of reaction
C. Decrease the rate of reaction
D. Not change the rate of reaction

Q.1010 **All of the following bonds stabilizes tertiary structure of proteins except?**
A. Disulfide bond
B. Ionic bond
C. Hydrogen bonding
D. Peptide bond

Q.1011 **How many pyrrole rings are present in a haem group of haemoglobin molecule?**
A. 4
B. 12
C. 8
D. 16

Q.1012 **Two chains of insulin are held together by_______ in ________ structure:**

Opt:	Interaction	Structure
A.	Peptide bonds	Primary
B	Disulfide bridges	Quaternary
C.	Disulfide bonds	Secondary
D.	Disulfide bridges	Primary

Q.1013 **Each flat linear α chain and β chain of hemoglobin, synthesized by ribosomes, exhibit**
A. Primary structure
B. Tertiary structure
C. Secondary structure
D. Quaternary structure

Q.1014 **Lipase can hydrolyze them:**
A. Triglycerides
B. Terpenoids
C. Waxes
D. All A, B, C

Q.1015 **Which of the following lipids are component of biological membranes?**
A. Triglycerides
B. Phospholipids
C. Waxes
D. Terpenoids

Q.1016 **Which of the followings is not an inhibitor of enzymes?**
A. Anti-metabolites
B. Sucrose
C. Antibiotics
D. ATP

Q.1017 **Anti-codon carrying RNA is:**
A. rRNA
B. tRNA
C. mRNA
D. microRNA

Q.1018 **Estrogen, Progesterone and testosterone are derivatives of:**
A. Fatty acids
B. Triglycerides
C. Steroids
D. Phospholipids

Q.1019 **The one which is not related to others?**
A. Collagen
B. Cuticle
C. Haemoglobin
D. Silk

Q.1020 **How many carbons present in R chain of oleic acid?**
A. 18
B. 15
C. 16
D. 17

Q.1021 **Which of the followings is mixture of long chain alkanes, ketone bodies, alcohol and ester of long chain fatty acid?**
A. Cholesterol
B. Phospholipids
C. Waxes
D. Triglycerides

Q.1022 **Bee wax is an example of:**
A. Natural wax
B. Synthetic Terpenoids
C. Natural Terpenoids
D. Synthetic wax

Q.1023 **Skeleton of phospholipid is:**
A. Phosphoric acid
B. Nitrogen base
C. Glycerol
D. Hydrocarbon chain

Q.1024 **Polar part of lecithin is:**
A. Head containing phosphoric acid
B. Head containing hydrocarbon chain
C. Tail containing phosphoric acid
D. Tail containing hydrocarbons

Q.1025 **Oleic acid is:**
A. Monounsaturated fatty acid
B. Polyunsaturated fatty acid
C. Diunsaturated fatty acid
D. Triunsaturated fatty acid

Q.1026 **A typical neutral fat molecule is made up by:**

Opt:	Glycerol molecules	Fatty acid molecules
A.	3	1
B	1	3
C.	1	1
D.	3	3

SKN

Q.1027 The essential chemical components of many coenzymes are
A. Nucleic acid B. Carbohydrates
C. Vitamin D. Proteins

Q.1028 Binding of malonate with succinic dehydrogenase affects:
A. Conversion of succinate to malate B. Conversion of succinate to fumarate
C. Conversion of isocitrate to citrate D. Conversion of fumarate to malate

Q.1029 Pick the correct one:

	Coenzyme	**Apoenzyme**	**Holoenzyme**	**Activator**	**Prosthetic group**
A.	Detachable inorganic	Protein+ non-protein	Protein only	Detachable, Haeme group	Detachable inorganic
B.	Detachable organic	Protein only	Protein+non-protein	Detachable, metal ions	Covalently bonded
C.	Covalently bound, organic	Protein + Haeme group	Proteins + Cysteine	Covalently bound, metal bonds	Detachable, co-enzyme
D.	Covalently bound, inorganic	Protein + Metal ions	Proteins + Amino acids	Covalently bound vitamins	Covalently inorganic

Q.1030 Due to which property, water acts as thermostablizer
A. Heat of vaporization B. Specific heat capacity
C. Hydrophobic exclusions D. Ionization

Q.1031 Most abundant compound in our cells is:
A. Proteins B. Lipids
C. Carbohydrates D. Water

Q.1032 Water ascends in Xylem vessels due to all of its properties except:
A. Hydrophobic exclusion B. Cohesion
C. Hydrogen bonding D. Adhesion

BIOLOGICAL MOLECUES AND ENZYME MCQS FROM PMC PAID TESTS

Introduction to biological molecules

Q.1033 Which of the following is a trace element?
A. Hydrogen B. Copper
C. Oxygen D. Carbon

Q.1034 In catabolic reaction ______ free the _______.
A. Fatty acids, polysaccharides B. Proteins, amino acids
C. Lipids, glucose D. None of these

Q.1035 Which of the following is a chemical link between catabolism and anabolism?
A. AMP B. ADP
C. ATP D. All of these

Q.1036 Which one is the basic element found in all organic compounds?
A. Oxygen B. Carbon
C. Hydrogen D. All of these

Q.1037 Interconversion of carbohydrates, proteins and lipids in living cells are an example of:
A. Coordinated catabolic activities B. Coordinated anabolic activities
C. Both A and B D. None of these

Q.1038 How are high energy phosphate bonds broken down in ATP?
A. Anabolism B. Catabolism
C. Hydrolysis D. All of these

Q.1039 The branch of biology which deals with the study of chemical compounds and the chemical processes in the living organisms is called?
A. Chemistry B. Molecular Biology
C. Biochemistry D. Both a and b

Q.1040 Reactions in which simple substances are combined to form complex substances are called?
A. Metabolic reactions B. Catabolic reactions
C. Anabolic reactions D. Both B and C

Water

Q.1041 Specific heat of vaporization of water is:
A. 774 Kcal/kg B. 874 Kcal/kg
C. 574 Kcal/kg D. 674 Kcal/kg

Q.1042 What percentage of water is found in brain cells?
A. 50 B. 80
C. 85 D. 90

Q.1043 The attraction between water molecules and cell wall of xylem is termed as:
A. Cohesion B. Tension
C. Adhesion D. Imbibition

Q.1044 In living organisms, the lubricant which provides protection against damage resulting from friction is?
A. Water B. Carbohydrates
C. Lipids D. Proteins

Q.1045 The number of calories required to raise the temperature of lg of water from 15 to 16 °C is called?
A. Specific Heat of Vaporization B. Specific heat capacity
C. Caloric heat D. Both a and b

Q.1046 Liposomes are:
A. Drug carriers B. Water in middle
C. Sac of phospholipids D. ALL A, B, C

Carbohydrates

Q.1047 Glycogen is an example of:
A. Phospholipid B. Polysaccharides
C. Carbohydrates D. Both B and C

Q.1048 What percentage of glucose is normally found in human blood?
A. 0.008 B. 0.0008
C. 0.018 D. 0.08

Q.1049 The covalent bond between two monosaccharide subunits is called?
A. Phosphodiester bond B. Peptide bond
C. Ionic bond D. Glycosidic bond

Q.1050 Which of following cannot be hydrolyzed?
A. Polysaccharides B. Monosaccharides
C. Oligosaccharides D. Sucrose

Q.1051 Animal starch is called:
A. Cellulose B. Agar
C. Glycogen D. Chitin

Q.1052 It is not a monosaccharide:
A. Fructose B. Glucose
C. Sucrose D. All are monosaccharides

Q.1053 Sucrose is present in:
A. Sugar cane B. Milk
C. Almonds D. None

Q.1054 It is _______________ is valuable for diabetic control.
A. Green vegetable B. Grapes
C. Rice D. All of these

Q.1055 Glycogen is most abundantly present in:
A. Liver B. Muscles
C. Kidneys D. Both A and B

Q.1056 Which of the following is soluble in hot water?
A. Starch B. Glycogen
C. Amylose D. Amylopectin

Q.1057 Glucose is also called as:
A. Dextrose B. Lymph sugar
C. Grape sugar D. None

Q.1058 Glycosidic bond is present between:
A. Monosaccharides B. Carbon atoms
C. Amino acids D. Fatty acids

Q.1059 Which of the following is a trisaccharide?
A. Mannose B. Galactose

SKN

C. Maltose
D. Raffinose

Q.1060 Glycogen on hydrolysis gives:
A. Glucose
B. Galactose
C. Fructose
D. Ribose

Q.1061 Cellulose on hydrolysis yields:
A. α D-Glucose
B. α L-Glucose
C. β D-Glucose
D. β L-Glucose

Q.1062 Carbohydrate catabolism is concerned with the fate of:
A. ATP
B. Amino acid
C. Glucose
D. All of these

Q.1063 A complex substance which on hydrolysis yields polyhydroxy aldehyde or ketone subunits is called?
A. Lipid
B. Carbohydrate
C. Protein
D. All of these

Q.1064 Which one gives blue color?
A. Starch
B. Glycogen
C. Cellulose
D. None of these

Q.1065 To synthesis l0g of glucose, how much energy is essentially required?
A. 727 Kcal
B. 712 Kcal
C. 717 Kcal
D. 719 Kcal

Q.1066 Glycogen is present in all body except
A. Brain
B. Heart
C. Blood
D. Tissues

Q.1067 Alpha 1-4 glycosidic linkage is present in:
A. Maltose
B. Sucrose
C. Cellulose
D. Cellobiose

Q.1068 The 5 carbon sugar present in the heart muscle is:
A. Lyxose
B. Ribose
C. Xylose
D. Glucose

Q.1069 Which is true regarding open chain structure of glucose?
A. There are six asymmetric carbons
B. There are five asymmetric carbons
C. There are four asymmetric carbon
D. There are three asymmetric carbon

Q.1070 Rarely occurring monosaccharides observed in some bacteria is?
A. Tetroses
B. Hexoses
C. Pentoses
D. Trioses

Q.1071 In the molecular formula $C_x(H_2O)y$, the value of x ranges from?
A. 1000
B. 2000
C. 3 to 7000
D. 3000 and more

Q.1072 How many monosaccharide units do oligosaccharides yield upon hydrolysis?
A. 2
B.5
C. 10
D. All of these

Q.1073 Which one of the following biomolecules is most abundant in animals?
A. Starch
B. Cellulose
C. Glycogen
D. All of these

Q.1074 This is non-reducing sugar:
A. Maltose
B. Sucrose
C. Cellobiose
D. Lactose

Q.1075 What type of atom is carbon atom?
A. Divalent
B. Monovalent
C. Trivalent
D. Tetravalent

Q.1076 Which bond provides stability to complex carbohydrate molecule?
A. C H
B. C N
C. C O
D. C C

Q.1077 Which of the following constitute large organic molecules?
A. Cellulose
B. Glucose
C. Amino acids
D. All of these

Q.1078 These are crystalline, water soluble, forming pyranose rings
A. Monosaccharides
B. Polysaccharides
C. Oligosaccharides
D. Disaccharides

SKN

Q.1079 When the glucose level in blood comes down, glucose is synthesized from ________.

A. Fats B. Glycogen
C. Amino acids D. DNA

Q.1080 Which are the most physiologically significant disaccharides?

A. Maltose B. Sucrose
C. Lactose D. All of these

Q.1081 Which of the following is the most complex sugar?

A. Monosaccharides B. Oligosaccharides
C. Polysaccharides D. Carbohydrates

Q.1082 $(CH_2O)_n$ is a general formula of:

A. Monosaccharides B. Oligosaccharides
C. Polysaccharides D. Carbohydrates

Q.1083 The functional group that best represents ketoses is?

A. CO B. COOH
C. HCOH D. HOH

Q.1084 Unit of carbohydrate is:

A. Monosaccharides B. Amino acids
C. Fatty acids D. All

Q.1085 Glycogen is present in all body except:

A. Brain B. Tissues
C. Heart D. Blood

Q.1086 The smallest monosaccharide is:

A. Triose B. Pentose
C. Tetrose D. None of these

Q.1087 Ribose is a monosaccharide constituent of many_______.

A. Enzymes B. Coenzymes
C. Vitamins D. Antibiotic

Proteins

Q.1088 This amino acid not found in proteins is

A. Beta alanine B. Glutamine
C. Tyrosine D. Histidine

Q.1089 The high content of which amino acid confers resistance, stability and insolubility to hairs, nails and skin:

A. Glycine B. Alanine
C. Methionine D. Cysteine

Q.1090 Which structure of protein gives information about the folding of a protein?

A. Primary structure B. Tertiary structure
C. Secondary structure D. Quaternary structure

Q.1091 The protein contains bonds:

A. Inorganic bonds B. Peptide bonds
C. Glycosidic bonds D. Covalent bonds

Q.1092 Protein constitutes of what percentage of the total dry weight found in cells?

A. 50 B. 55
C. 40 D. 65

Q.1093 Which structural organization is most common in globular proteins?

A. Primary structure B. Secondary structure
C. Tertiary structure D. Quaternary structure

Q.1094 An enzyme containing 2 chains of polypeptide has:

A. Primary structure
B. Primary and secondary structure
C. Primary, secondary, tertiary and quaternary structure
D. It has all structures

Q.1095 Word Protein is derived from:

A. Latin B. Greek
C. Roman D. English

Q.1096 Keratinized epithelium is present in:

A. Hair B. Skin
C. Bone D. Muscle

Q.1097 Which of the molecules is formed by peptide bond?

A. Ammonia B. Iron

C. Water
D. None of the above

Q.1098 Which of the following is not an amino acid?
A. Histidine
B. Lactic acid
C. Glutamic acid
D. Glycine

Q.1099 What are the distinguishing features of fibrous proteins?
A. Elastic
B. Non-crystalline
C. Disorganized
D. Both A and B

Q.1100 Avidin is a protein that:
A. Binds egg white with biotin
B. Binds egg white with egg albumin
C. Both A and B
D. This protein do not belong to egg white

Q.1101 The molecular basis of sickle cell anemia was found by:
A. F. Sanger
B. Beadle
C. Tatum
D. Ingram

Q.1102 What are the main distinguishing features of globular proteins?
A. Crystalline
B. Elastic
C. Functional
D. Both A and C

Q.1103 Antibodies play important role against microorganisms and other pathogens to which type of proteins do they belong?
A. Globular
B. Functional
C. Fibrous
D. Both A and B

Q.1104 Proteins are the polymers of?
A. Amino acids
B. Fatty acids
C. Nucleotides
D. None of these

Q.1105 What type of protein is Fibrin?
A. Functional
B. Structural
C. Enzymatic
D. All of these

Q.1106 The total number of amino acids that have been found in tissues and cells are?
A. 250
B. 200
C. 20
D. 170

Q.1107 What are the distinguishing features of fibrous proteins?
A. Non-crystalline
B. Elastic
C. Disorganized
D. Both A and B

Q.1108 An insulin molecule is made up of how many polypeptide chains?
A. 1
B. 2
C. 3
D. 4

Q.1109 It is protein in nature:
A. Fats /cholesterol
B. ATP
C. Glycogen
D. Ligase

Q.1110 In glycine, R group of amino acids is replaced by?
A. COOH
B. CH_2
C. CH_2
D. None of these

Q.1111 What type of bonding in proteins maintains the integrity of the helical secondary structure?
A. Hydrogen bonds
B. Ionic bonds
C. Disulfide linkages
D. Both A and B

Q.1112 How many bond/s are in a dipeptide?
A. 1
B. 3
C. 2
D. 4

Q.1113 Vegetative source of protein:
A. Egg
B. Soyabean
C. Pulses
D. Both B and C

Q.1114 Which structure of protein gives information about number and sequence of amino acids?
A. Primary structure
B. Secondary structure
C. Tertiary structure
D. Quaternary structure

Q.1115 Globular structure of protein is due to:
A. Primary structure
B. Secondary structure
C. Tertiary structure
D. Quaternary structure

Q.1116 Most abundant protein in blood:
A. Collagen
B. Hemoglobin

SKN

C. Actin
D. Rubisco

Q.1117 Abundant protein in human body:
A. Rubisco
B. Collagen
C. Cellulose
D. Albumin

Q.1118 Coagulated protein is:
A. Insoluble
B. Non folded
C. Nonfunctional
D. All of above

Q.1119 How many types of amino acids form proteins in human body?
A. 25
B. 70
C. 20
D. 400

Q.1120 Proteins are polymers of:
A. Amino acids
B. Fatty acids
C. Nucleotides
D. None of these

Q.1121 Number of essential amino acids is?
A. 10
B. 20
C. 9
D. 110

Q.1122 Which of the following is important secondary structure in proteins?
A. α-helix
B. β-pleated sheet
C. β-pleated sheet parallel
D. Both A and B

Q.1123 Enzymes that are integral part of ribosomes are involved in the synthesis of which of the following molecules?
A. Lipids
B. Protein
C. Carbohydrates
D. All of these

Lipids

Q.1124 A fatty acid is composed of _______.
A. Acid group at one end
B. Acid groups at both ends
C. Amino group at one end
D. Amino group at both ends

Q.1125 A compound produced as a result of a chemical reaction of an alcohol with an acid in which water molecule is released is called?
A. Monosaccharide
B. Fatty acid
C. Nucleic acid
D. Neutral lipid

Q.1126 Serine is a component of:
A. Lipid
B. Haemoglobin
C. Phospholipid
D. Waxes

Q.1127 Choline is component of:
A. Phospholipids
B. Phosphatidic acid
C. Terpenoids
D. Waxes

Q.1128 Sterols are:
A. Lipid
B. Protein
C. Carbohydrates
D. All of these

Q.1129 Steroid are naturally:
A. Lipoproteins
B. Proteins
C. Lipids
D. A and B

Q.1130 These are properties of lipids:
A. Insoluble in water and soluble in fat solvent.
B. High energy content
C. Structural component of cell membrane
D. All of these

Q.1131 Fatty acids containing 18 C atoms and a single double bond are?
A. Saturated
B. Unsaturated
C. Oleic acid
D. Palmitic acid

Q.1132 Which of the following is a phospholipid?
A. Sterol
B. Cholesterol
C. Lecithin
D. Steroid

Q.1133 Lipids show solubility in which of the following solvents?
A. Water
B. Ether
C. Inorganic solvents
D. All solvents

Q.1134 Lipids have great functional significance in the human body. What are the main functions of the lipids?
A. Energy source
B. Structure of membrane

SKN

C. Mechanical protection
D. All of these

Q.1135 Lecithin contains ______.
A. Ethanolamine
B. Choline
C. Serine
D. Betaine

Q.1136 Hydrophilic substances are ______ and hydrophobic substances are _____.
A. Water loving, Water fearing
B. Polar, Non-polar
C. Soluble in water, Soluble in lipid
D. All are correct

Q.1137 A triglyceride is:
A. Protein
B. Nucleic acid
C. A simple sugar
D. Lipid

Q.1138 Nitrogenous bases such as choline and serine arc significant part of which of the following?
A. Sphingolipids
B. Phospholipids
C. Phosphodiester
D. none of these

Q.1139 Saponification number describes ______.
A. Unsaturation in fat
B. Average molecular weight of fatty acid
C. Acetyl number
D. Acid number

Q.1140 Lipids show solubility in which of the following solvents?
A. Water
B. Ether
C. Inorganic solvents
D. All solvents

Q.1141 Essential fatty acids show all the characters except______.
A. Lipotropism
B. Blood clotting factors
C. Used for energy production
D. None of these

Q.1142 Fatty acid contains:
A. Alcohol and esters
B. Carboxylic and alkyl groups
C. Carboxylic group and isoprenoid
D. Phospholipids and alkyl groups

Q.1143 In water, hydrophobic interactions of phospholipids are:
A. In heads
B. In tails
C. Both A and
B D. None

Q.1144 Liposomes are:
A. Vesicles
B. Have water
C. Drug carrier
D. All of the above

Q.1145 Glycerol is component of:
A. Fatty acids
B. Acylglycerols
C. Phospholipids
D. Both B and C

Q.1146 Oils are:
A. Saturated fatty acids
B. Unsaturated fatty acids
C. Glycerides with unsaturated fatty acids
D. Glycerides with saturated fatty acids

RNA

Q.1147 In contrast to eukaryotic mRNA, prokaryotic mRNA:
A. Can be polycistronic
B. Is synthesized with introns
C. Can only be monocistronic
D. Has a poly A tail

Q.1148 A sample of RNA is sequenced and found to contain 22% adenine. Which of the following conclusions can also be drawn about the sample?
A. 22% uracil
B. 22% thymine
C. 22% cytosine
D. 22% guanine

Q.1149 For a protein molecule of 2000 amino acids, the mRNA will have a length of how many nucleotides?
A. 3000
B. 2000
C. 6000
D. 5000

Q.1150 Most abundant intracellular free nucleotide is:
A. UTP
B. FAD
C. NAD
D. ATP

Q.1151 RNA does not contain:
A. Adenine
B. Hydroxy methyl cytosine
C. Phosphate
D. Thymine

Conjugated molecules (glycolipids, glycoproteins)

Q.1152 Lipoproteins rich in cholesterol are:
A. Chylomicrons
B. VLDL
C. LDL
D. HDL

SKN

Q.1153 HDL is synthesized in:
A. Adipose tissue B. Liver
C. Intestine D. Liver and intestine

Q.1154 Which of the following statement is not true for compounds like glycoprotein and glycolipids?
A. They are conjugated molecules of carbohydrates
B. Both have role in the extracellular matrix of animals
C. They are components of biological membranes.
D. Both are produced and secreted by endoplasmic reticulum

Q.1155 The basic framework structure of all types of membranes are:
A. Glycolipids B. Glycoproteins
C. Lipoproteins D. Nucleoproteins

Q.1156 Glycosphingolipid are made up of
A. Sphingolipids B. Alcohol and fatty acids
C. Carbohydrate and sphingolipids D. Carbohydrates and fatty acids

Out of syllabus

Q.1157 The oldest mineral discovered so far is which of the following, which dates back to 4.4 billion years:
A. Iron B. Cadmium
C. Diamond D. Zircon

Q.1158 Which of the following makes protective coatings around the plant organs
A. Lipids B. Waxes
C. Glycerols D. Glycolipids

Q.1159 Which of the following is a water-soluble vitamin?
A. Riboflavin B. Vitamin c
C. Niacin1 D. All of these

Q.1160 In DNA molecules, Adenine pairs with which of the following nucleic acid bases?
A. Guanine B. Thymine
C. Cytosine D. Uracil

Q.1161 Nontoxic vitamins include which of the following?
A. Vitamin c B. Vitamin b
C. Both A and B D. None of the above

Q.1162 Reactions in which simple substances are combined to form complex substances are called:
A. Metabolic reactions B. Catabolic reactions
C. Anabolic reactions D. None of these

Q.1163 Which of the following is water soluble vitamin?
A. A B. B
C. D D. K

Q.1164 The number of water-soluble vitamins is:
A. 3 B. 6
C. 9 D. 12

ENZYMES

Introduction/Characteristics of Enzymes

Q.1165 The reaction will proceed faster if the activation energy is?
A. High B. Low
C. Remains same D. None of these

Q.1166 The energy required to start a reaction is called?
A. Startup energy B. Initial energy
C. Point energy D. Activation energy

Q.1167 An enzyme which requires a biological change in order to become active is called?
A. Transferase B. Zymogen
C. Hydrogenase D. Trypsin

Q.1168 An enzyme without its cofactor is called:
A. Coenzyme B. Apoenzyme
C. Holoenzyme D. Proenzyme

Q.1169 If the non-protein part of enzyme is covalently bonded to the enzyme it is known as?
A. Coenzyme B. Activator
C. Cofactor D. Prosthetic group

Q.1170 Small organic, non-protein part that helps in enzyme reactions:

A. Co-factor
B. Catalyst
C. Activator
D. Prosthetic group

Q.1171 An activated enzyme made up of a polypeptide with its cofactor is:

A. Substrate
B. Holoenzyme
C. Coenzyme
D. Apoenzyme

Q.1172 Nicotinamide adenine dinucleotide is an example of:

A. Coenzyme
B. Holoenzyme
C. Cofactor
D. Apoenzyme

Q.1173 Co-enzyme require:

A. Vitamins
B. Proteins
C. Fats
D. Carbohydrate

Q.1174 Which of the following form weak linkage with enzyme?

A. Co-factor
B. Activator
C. Co-enzyme
D. Activator

Q.1175 Co-factors are divided into groups:

A. 2
B. 3
C. 4
D. 4

Q.1176 The substrate binds to specific region of enzyme called?

A. Key
B. Active site
C. Hyperactive site
D. None of these

Q.1177 All enzymes are:

A. Globular proteins
B. Fibrous proteins
C. Glycoproteins
D. Lipoproteins

Q.1178 What does the active site of the enzyme determine?

A. Looks like a lump projection from the surface of an enzyme
B. Forms no chemical bond with substrate
C. Never changes
D. Determines by its structure the specificity of an enzyme

Q.1179 Enzymes showing substrate specificity are specific to how many substrates?

A. 1
B. 3
C. 2
D. 4

Q.1180 Which term is used to refer to an inactive enzyme precursor?

A. Apoenzyme
B. Null enzyme
C. Zymogen
D. Inhibitor

Q.1181 Catalysts that increase the rate of biological chemical reaction are called:

A. Proteins
B. Vitamins
C. Enzymes
D. Minerals

Q.1182 Which of the following best describes a coenzyme?

A. Covalently bonded non-protein part of an enzyme
B. Cofactor consists of metal ions
C. Loosely bonded non-protein part of an enzyme
D. Both A and B

Q.1183 Which statement about enzyme is incorrect?

A. Some of them consist solely of protein with no non protein part
B. They catalyze a chemical reaction without being utilized
C. They without their cofactor are called apoenzyme
D. All enzymes are fibrous proteins

Q.1184 Active form of an enzyme:

A. Coenzyme
B. Apoenzyme
C. Holoenzyme
D. Proenzyme

Q.1185 A cofactor made of inorganic ion which is detachable is called?

A. Prosthetic group
B. Coenzyme
C. Activator
D. Cofactor

Q.1186 Enzymes are globular proteins because:

A. They have a primary structure
B. They have a secondary structure
C. They have a tertiary structure
D. All of the above

Q.1187 A small organic, non-protein molecule that carries chemical groups between enzymes is:

A. Cofactor
B. Catalyst
C. Substrate
D. Coenzyme

Q.1188 Biological molecules which catalyze a biochemical reaction and remain unchanged after completion of reaction are called?
A. Cofactor
B. Coenzymes
C. Activator
D. Enzymes

Q.1189 Enzymes bind with chemical reactant known as:
A. Product
B. Reactant
C. Substrate
D. All of these

Q.1190 Which of the following vitamin acts as a coenzyme
A. Vitamin b
B. Vitamin b
C. Vitamin b2
D. All of these

Q.1191 If the non-protein part of enzyme is covalently bonded to the enzyme it is known as?
A. Coenzyme
B. Prosthetic group
C. Cofactor
D. Activator

Q.1192 Enzyme reacts with substrate to form:
A. Product
B. Active site
C. Binding site
D. Catalytic site

Q.1193 Enzymes are __________________ in nature:
A. Carbohydrates
B. Lipids
C. Nucleic acids
D. Proteins

Q.1194 Which type of bond are never formed when substrate fits into active site of enzyme?
A. Hydrogen bonds
B. Ionic interactions
C. Covalent linkages
D. Hydrophobic interactions

Q.1195 The mechanism of enzyme activation is referred to as:
A. Activation energy
B. Catalysis
C. Enzyme specificity
D. Denaturation

Q.1196 The specificity of enzyme structure depends upon:
A. Active site
B. Allosteric site
C. Globe shape
D. All of these

Q.1197 Catalytic activity takes place at:
A. Active site
B. Allosteric site
C. Regulatory site
D. All of these

Q.1198 Which statement about active site is not true?
A. Active site is of spherical shape
B. Active site is nonspecific
C. Active site contains few amino acids
D. Active site converts substrate into product

Q.1199 Type of bond present between enzyme and prosthetic group:
A. Hydrogen
B. Covalent
C. Ionic
D. Coordinate covalent

Q.1200 Which one forms the raw material for coenzymes?
A. Vitamins
B. Carbohydrates
C. Lipids
D. Proteins

Mechanism of action of enzymes

Q.1201 The lock and key model of enzyme action was proposed by:
A. Louis Pasteur
B. Emil Fischer
C. Daniel Koshland
D. Urey Miller

Q.1202 The complex that forms when a substrate binds to enzyme is called:
A. Enzyme-substrate complex
B. Enzyme complex
C. Substrate complex
D. Structural complex

Q.1203 Enzymes do not affect:
A. Substrate concentration
B. Product concentration
C. Both A and B
D. None

Q.1204 Who proposed lock and key model of enzyme activity?
A. Emil Fischer
B. Daniel Koshland
C. Fredrick Sanger
D. James Watson

Q.1205 In the lock and key model of enzyme activity, the substrate acts as the:
A. Key
B. Lock
C. Both A and B
D. None of the above

Q.1206 Enzymes work by which of the following?

A. Increasing the activation energy
B. Reducing the activation energy
C. Making exergonic reactions endergonic
D. Making endergonic reactions exergonic

Q.1207 How many models are present for enzyme-substrate complex or reaction?

A. 3
B. 2
C. 4
D. 5

Q.1208 Which statement is incorrect about Lock and Key Model?

A. Specific enzyme can transform only a specific substrate
B. Active site of an enzyme is a non-flexible structure
C. Active site does not change before during or even after the reaction
D. It explains the mechanism of every chemical reaction

Q.1209 Which types of bond are never formed when a substrate fits into the active site of an enzyme?

A. Hydrogen bonds
B. Ionic interactions
C. Hydrophobic interactions
D. Covalent linkages

Q.1210 Koshland in 1959 proposed the modified form of which of the following?

A. Unit membrane model
B. Fluid mosaic model
C. Reflective index model
D. Induced fit model

Q.1211 Induced fit model was introduced by Koshland in which of the following year?

A. 1960
B. 1961
C. 1959
D. 1966

Q.1212 Lock and key model was proposed by:

A. Koshland
B. Fischer
C. Krebs
D. Darwin

Q.1213 Which of the following is false about concerning enzymes?

A. Substrates must bind the enzyme's active site in order to initiate its effects
B. Enzymes increase both the forward rate and reverse rate of a reaction
C. Enzymes are not destroyed in a reaction and can be used in the same reaction countless times
D. Enzymes increase the amount of product created in a reaction

Q.1214 Number of substrate molecules converted into product by one molecule of enzyme active site per unit time is called?

A. Turnover number
B. Substrate number
C. Reaction number
D. None

Q.1215 According to the induced fit model, what happens when an enzyme-substrate complex is formed?

A. The contact between the substrate and the enzyme causes a change in the shape of the active site
B. The shape of the substrate and the shape of the active site is complementary to each other
C. The substrate fits into the active site and forms bonds with the amino acids at the active site
D. All of these

Q.1216 What affect do enzymes have on the activation energy of a reaction?

A. Increases
B. Decreases
C. No affect
D. Increases or decreases depending upon individual enzyme

Q.1217 While bound to the active site, the substrate is converted into which of the following?

A. Complex
B. Substrate of high energy
C. Product of reaction
D. Both A and B

Q.1218 The primary function of cofactors is to?

A. Assist in enzyme synthesis
B. Assist in enzyme inhibition
C. Assist in enzyme activity
D. Both A and B

Q.1219 In enzyme catalytic reaction the substrate is first converted to a high energy state called?

A. Transition state
B. High energy state
C. Activation state
D. Breaking point

Q.1220 Allosteric enzymes consist of multiple:

A. Inhibitors
B. Polypeptide chains
C. Active sites
D. Temperature ranges

SKN

Q.1221 Functions of enzymes include all of the following except:

A. Lessening the time required for a reaction to take place
B. Shifting substrates into more favorable positions in the active site
C. Decreasing the activation energy of a reaction
D. Shifting the equilibrium of a reaction

Factors effecting rate of enzyme action

Q.1222 Upon increasing the temperature the shape of enzyme's active site?

A. Remains same
B. Changes
C. Adopts a geometric conformation
D. Denatures

Q.1223 The optimum pH for enzyme arginase is which of the following?

A. 9
B. 9.3
C. 9.7
D. 10

Q.1224 The optimum pH for the functioning of the enzyme pepsin is?

A. 2
B. 3
C. 4
D. 5

Q.1225 If we add more substrate to already occurring enzymatic reaction and it has no effect on the rate reaction, the process is called?

A. Denaturing
B. Saturation
C. Composition
D. Inhibition

Q.1226 pH of salivary amylase is:

A. 6.8
B. 7.60
C. 2.00
D. 5.50

Q.1227 It works in acidic medium:

A. Arginase
B. Pancreatic lipase
C. Catalase
D. Enterokinase

Q.1228 Extreme change in pH results in which of the following?

A. Change in ionization of amino acids at the active site of the enzyme
B. Change in the ionization of the substrate
C. Increase in the reaction rate
D. Denaturation of the enzyme

Q.1229 What is meant by optimum temperature of an enzyme?

A. The temperature at which the primary structure of an enzyme remains intact
B. The temperature at which an enzyme makes the maximum amount of product
C. The temperature at which an enzyme may be more affected by an inhibitor
D. The temperature at which an enzyme makes the least amount of product

Q.1230 Rate of reaction is double for rise of every ________________.

A. 20 °C
B. 10 °C
C. 30 °C
D. 20 °C

Q.1231 Which of the following strategies of enzymatic inhibition is used by noncompetitive inhibitors?

A. Bind to substrate so that it cannot bind to the active site
B. Target the enzyme for destruction using a protease
C. Bind to the active site and prevent substrate from binding
D. Bind to an allosteric site to cause a conformational shift in the enzyme

Q.1232 If more substrate to an already occurring enzymatic reaction is added more enzyme activity is seen because?

A. There is probably more substrate present than there is enzyme
B. There is probably more product present than either substrate or enzyme
C. The enzyme substrate complex is probably failing to from during the reaction
D. There is probably more enzyme available than there is substrate

Q.1233 The optimum pH for the functioning of pancreatic lipase is?

A. 9
B. 8
C. 7
D. 6

Q.1234 A researcher has designed a new type of inhibitor that binds at the active site of an enzyme. What type of inhibition does this molecule display?

A. Uncompetitive inhibition
B. Competitive inhibition
C. Noncompetitive inhibition
D. All of these

Q.1235 Which of the following changes could lead to loss of enzymatic function?
A. Decrease in activation energy of the reaction
B. Increase in enzyme concentration
C. Change in overall enthalpy of the reaction
D. Increase in pH of the reaction

Q.1236 Which statement correctly describes why enzyme activity increases with increased enzyme concentration?
A. Collisions between enzyme and substrate molecules increase because of increased kinetic energy
B. Collisions between enzyme and substrate molecules increase because of increased heat energy
C. Collisions between enzyme and substrate molecules increase because of more active sites are available
D. Collisions between enzyme and substrate molecules increase because more substrate molecules are available

Q.1237 The rate of reaction of enzyme directly depends upon which of the following?
A. Low temperature
B. Amount of enzyme present at a specific time at unlimited substrate concentration
C. Maximum pH level
D. Nature of substrate

Q.1238 The enzyme-substrate complex is formed in which part of the enzyme molecule?
A. Binding site
B. Allosteric site
C. Catalytic site
D. None of the above

Q.1239 Which step, causes activation of catalytic site of an enzyme?
A. Change in pH of the surroundings
B. Change in the charge of the active site
C. Change in temperature
D. Formation of enzyme substrate site

Q.1240 If the concentration of enzyme is kept constant and amount of substrate is increased a point is reached where increase in substrates concentration does not affect the reaction rate because of?
A. Enzymes get denatured at higher substrate cone
B. Rate of reaction is indirectly proportional to substrate concentration at this point
C. All the active sites on enzyme molecule are occupied
D. All of these

Q.1241 What is the optimum temperature for working of enzymes in human body?
A. 32°C
B. 40°C
C. 37°C
D. 35°C

Q.1242 In acidic medium, amino acids carry positive charge and acts as:
A. Acid
B. Base
C. Neutral
D. None of these

Q.1243 If we increase the concentration of substrate then increase in the enzyme activity is due to which of the following?
A. There is sufficient concentration of enzyme
B. There is sufficient concentration of substrate
C. Active sites are not working properly
D. None of these

Q.1244 When we increase the pH then, enzyme reactivity is retarded due to:
A. Tertiary structure of enzyme is destroyed
B. Primary structure is destroyed
C. Active sites get blocked
D. Allosteric modulation

Q.1245 At low enzyme concentration, optimum pH and temperature, rate of reaction can be increased by:
A. Increased substrate concentration
B. Increasing pH
C. Increasing temperature
D. Increasing enzyme concentration

Q.1246 Number of substrate molecules converted into product by one molecule of enzyme active site per unit is called:

A. Turn over number B. Reaction number
C. Substrate number D. None of the above

Enzyme inhibition

Q.1247 The effect of competitive inhibitor on enzyme activity is such that it affects which of the following?
A. Increases enzyme activity B. Doesn't change enzyme activity
C. Decreases enzyme activity D. None of these

Q.1248 What is the characteristic of a non-competitive inhibitor?
A. Always binds at the active site
B. Adding more substrate reduces the effects of inhibition
C. Sometimes binds at the active site
D. Adding more substrate does not reduce the effects of inhibition

Q.1249 Reversible inhibitors form weak linkages with which of the following?
A. Enzyme B. Reactant
C. Product D. Substrate

Q.1250 Inhibitors which block the enzyme by forming weak bond are called:
A. Competitive inhibitors B. Non-competitive inhibitors
C. Irreversible inhibitors D. Both A and B

Q.1251 Reversible inhibitors form weak linkages with which of the following?
A. Enzyme B. Reactant
C. Product D. Substrate

Q.1252 The end product of an enzymatic reaction inhibits formation of product in an earlier step. This type of enzymatic regulation is known as?
A. Allosteric regulation B. Negative regulation
C. Metabolic pathway loop D. Feedback inhibition

Q.1253 In uncompetitive inhibition, the inhibitor binds with:
A. Enzyme B. Substrate
C. ES-complex D. All of these

Q.1254 In mixed inhibition, the allosteric affects:
A. Shape of substrate B. Shape of inhibitor
C. Shape of enzyme D. None of these

Q.1255 The non-substrate molecules that bind to the allosteric sites are called?
A. Inhibitors B. Reactants
C. Allosteric substrates D. Allosteric modulators

Q.1256 A chemical substance which can react (in place of substrate) with the enzyme but is not transformed into product/s and thus blocks the active site temporarily or permanently is called?
A. Coenzyme B. Blocker
C. Inhibitor D. Cofactor

Q.1257 Malonic acid is an example of which type of inhibitors?
A. Malonic acid is an example of which type of inhibitors?
B. Reversible inhibitor
C. Non-competitive inhibitor
D. Competitive inhibitor

Q.1258 In non-competitive inhibition, the quantity which remains same as the reaction proceed is?
A. Vmax B. Km
C. Ko D. Vo

Q.1259 A substance which binds at the active site of the enzyme but does not result in the formation of the products is called:
A. Irreversible inhibitor B. Reversible inhibitor
C. Non-competitive inhibitor D. Competitive inhibitor

Q.1260 An inhibitor is added, disrupting the function of a particular enzyme. The experimenter adds more substrate, and enzyme function increases again. These results indicate the involvement of what type of inhibitor?
A. Non-competitive B. Uncompetitive
C. Allosteric D. Competitive

SKN

SKN

Q.1261 What is meant by enzyme denaturation?
A. Peptide bonds between amino acid residues are broken
B. The enzyme loses its secondary structure
C. The enzyme loses its tertiary structure
D. All of the above

Q.1262 The effect of competitive inhibitor on enzyme activity is such that it affects which of the following?
A. Increases enzyme activity B. Doesn't change enzyme activity
C. Decreases enzyme activity D. None of these

Q.1263 The non-substrate molecules that binds to the allosteric sites are called?
A. Inhibitors B. Reactants
C. Allosteric substrates D. Allosteric modulators

Q.1264 Which of the following best describes competitive inhibitors?
A. Do occupy active site B. Destroy the structure of enzyme
C. Resemble structurally with substrate D. None of the above

Q.1265 ______ is a competitive inhibitor of succinic dehydrogenase.
A. Malonic acid B. Malic acid
C. Fumaric acid D. Acetic acid

Q.1266 In competitive inhibition, a thing that binds to enzyme active site are?
A. Substrate B. Catalyst
C. Inhibitors D. Both A and B

Q.1267 Feedback inhibition in most metabolic pathways involves which type of enzymes?
A. Holoenzymes B. Allosteric enzymes
C. Coenzymes D. Apoenzyme

Q.1268 These form weak linkages with enzymes:
A. Irreversible inhibitors B. Reversible inhibitors
C. Both A and B D. None

Q.1269 In uncompetitive inhibition, the inhibitor binds with:
A. Enzyme B. Substrate
C. ES complex D. All of these

Q.1270 An allosteric enzyme will have:
A. Many active sites B. Many substrates
C. Many binding sites D. No binding site

Q.1271 In mixed inhibition, the inhibitor binds to:
A. Allosteric site B. Active site
C. Binds to substrate D. Does not bind to enzyme

Q.1272 Competitive inhibitors _______ enzyme activity.
A. Decrease B. Increase
C. Does not affect D. None

Q.1273 Structure of enzyme is altered by:
A. Competitive inhibitor B. Non- competitive inhibitor
C. Irreversible inhibitor D. Reversible inhibitor

Q.1274 In competitive inhibition, two things attached to enzyme's active site are:
A. Inhibitor B. Substrate
C. Both A and B D. None of these

Q.1275 The structure of an enzyme is altered by which of the following inhibitors?
A. Reversible inhibitor B. Competitive inhibitor
C. Non-competitive inhibitor D. Irreversible inhibitor

Out of the Syllabus

Q.1276 This enzyme is used to cut DNA molecule in rDNA technology
A. Ligase B. Phosphatase
C. Ribonuclease D. Restriction enzyme

Q.1277 Restriction endonucleases found in
A. Viruses B. Bacteria
C. Eukaryotes D. All of these

Q.1278 Antibodies can be digested by using which of the following types of enzymes?
A. Lipase B. Protease
C. Amylase D. Polymerase

Q.1279 Ligases help in which of the following reactions?
A. Splitting of two molecules B. Oxidation of molecules
C. Joining of molecules D. Both A and B

Q.1280 What type of enzymes is involved in biological oxidation?
A. kinases B. Dehydrogenases
C. Polymerases D. Phosphatases

Q.1281 Which of the following is not a class of enzyme?
A. Ligase B. Isomerase
C. Hydrolase D. Pyrimidine complex

Q.1282 Enzymes which are involved in transfer of electrons are known as:
A. Oxidases B. Dehydrogenase
C. Hydrolyses D. Both A and B

Q.1283 The following enzymes are regulated by calcium ions:
A. DNA polymerase B. Nitric oxide synthetase
C. Adenylate cyclase D. Phosphoprotein phosphatase

Q.1284 Enzyme which helps in changing the shape of molecule is called:
A. Ligases B. Dehydrogenases
C. Hydrolyses D. Isomerases

Q.1285 Phosphoglyceromutases are example of:
A. Lyases B. Hydrolases
C. Ligases D. Transferases

SKN

1	B	51		101	C	151	B	201	A	251	D	301		351	A	401	D	451	A
2	D	52		102	B	152	C	202	D	252	A	302		352	D	402	C	452	B
3	D	53		103	A	153	B	203	C	253	B	303		353	A	403	C	453	C
4	B	54		104	D	154	A	204	A	254	C	304		354	D	404	B	454	C
5	B	55		105	C	155	B	205	D	255	D	305		355	B	405	D	455	D
6	C	56		106	D	156	A	206	C	256	B	306		356	D	406	B	456	D
7	B	57		107	B	157	A	207	A	257	D	307		357	A	407	B	457	C
8	C	58		108	B	158	B	208	B	258	D	308		358	D	408	C	458	A
9	A	59		109	B	159	D	209	B	259	C	309		359	C	409	D	459	B
10	C	60		110	A	160	C	210	A	260	D	310		360	D	410	C	460	C
11	D	61		111	D	161	B	211	A	261	C	311		361	B	411	B	461	C
12	A	62		112	A	162	D	212	C	262	C	312		362	C	412	C	462	C
13	D	63		113	D	163	C	213	D	263	A	313		363	B	413	D	463	D
14	A	64		114	C	164	B	214	C	264	B	314		364	C	414	C	464	B
15	A	65		115	B	165	D	215	B	265	D	315		365	B	415	D	465	B
16	A	66	C	116	C	166	A	216	B	266	D	316		366	C	416	A	466	A
17	C	67	C	117	D	167	C	217	D	267	B	317		367	D	417	C	467	C
18	A	68	D	118	B	168	C	218	A	268	D	318		368	B	418	C	468	D
19	B	69	D	119	A	169	B	219	A	269	A	319		369	B	419	D	469	D
20	B	70	B	120	C	170	C	220	A	270	C	320		370	D	420	B	470	C
21	D	71	B	121	C	171	B	221	C	271	C	321		371	D	421	A	471	C
22	D	72	B	122	C	172	C	222	B	272	C	322		372	A	422	C	472	B
23	C	73	C	123	A	173	C	223	D	273	B	323		373	D	423	C	473	C
24	C	74	C	124	D	174	D	224	D	274	B	324		374	B	424	D	474	D
25	C	75	D	125	B	175	B	225	B	275	C	325		375	B	425	B	475	B
26	C	76	D	126	D	176	A	226	A	276		326		376	A	426	B	476	B
27	B	77	B	127	D	177	C	227	D	277		327		377	B	427	C	477	A
28	A	78	A	128	D	178	B	228	B	278		328		378	A	428	D	478	B
29	A	79	D	129	C	179	A	229	D	279		329		379	B	429	A	479	B
30	C	80	B	130	C	180	C	230	B	280		330		380	A	430	B	480	C
31	C	81	D	131	C	181	A	231	C	281		331		381	C	431	A	481	A
32	B	82	B	132	D	182	D	232	C	282		332		382	B	432	B	482	D
33	C	83	B	133	C	183	A	233	B	283		333		383	A	433	D	483	C
34	C	84	B	134	D	184	C	234	C	284		334		384	B	434	A	484	B
35	D	85	B	135	B	185	A	235	C	285		335		385	C	435	C	485	C
36	A	86	D	136	A	186	D	236	C	286		336	A	386	D	436	C	486	C
37	D	87	C	137	A	187	D	237	B	287		337	A	387	B	437	D	487	A
38	B	88	D	138	B	188	C	238	A	288		338	D	388	B	438	B	488	C
39	B	89	A	139	A	189	C	239	A	289		339	D	389	D	439	C	489	D
40	A	90	B	140	D	190	D	240	C	290		340	A	390	D	440	D	490	C
41	D	91	D	141	C	191	D	241	A	291		341	B	391	A	441	C	491	C
42	A	92	C,D	142	A	192	D	242	D	292		342	D	392	B	442	A	492	C
43	C	93	D	143	B	193	C	243	C	293		343	A	393	C	443	C	493	B
44	C	94	C	144	B	194	B	244	A	294		344	A	394	C	444	B	494	C
45	B	95	D	145	C	195	A	245	B	295		345	A	395	D	445	B	495	D
46	B	96	D	146	D	196	B	246	B	296		346	D	396	A	446	B	496	A
47	D	97	C	147	C	197	D	247	A	297		347	B	397	D	447	C	497	D
48	A	98	C	148	C	198	A	248	B	298		348	B	398	C	448	C	498	A
49	C	99	B	149	C	199	B	249	D	299		349	C	399	B	449	C	499	D
50	D	100	A	150	D	200	A	250	A	300		350	A	400	C	450	B	500	A

501	A	551	A	601	A	651	C	701	A	751	C	801	B	851	B	901	B	951	D
502	D	552	C	602	A	652	D	702	D	752	B	802	C	852	D	902	B	952	C
503	B	553	A	603	C	653	B	703	B	753	C	803	D	853	A	903	C	953	B
504	B	554	C	604	B	654	C	704	C	754	C	804	A	854	C	904	C	954	D
505	A	555	A	605	B	655	B	705	C	755	B	805	A	855	C	905	B	955	C
506	B	556	C	606	D	656	A	706	D	756	B	806	B	856	B	906	C	956	D
507	C	557	D	607	B	57	B	707	B	757	C	807	A	857	C	907	C	957	C
508	B	558	C	608	C	658	C	708	D	758	D	808	B	858	C	908	B	958	A
509	B	559	D	609	D	659	A	709	B	759	B	809	D	859	C	909	A	959	C
510	D	560	D	610	B	660	C	710	A	760	D	810	B	860	B	910	B	960	D
511	B	561	C	611	C	661	D	711	B	761	D	811	A	861	B	911	B	961	C
512	E	562	A	612	B	662	C	712	D	762	B	812	B	862	D	912	A	962	A
513	C	563	D	613		663	B	713	D	763	C	813	C	863	B	913	C	963	C
514	C	564	C	614	B	664	C	714	A	764	B	814	A	864	A	914	A	964	
515	A	565	A	615	B	665	B	715	D	765	C	815	C	865	A	915	D	965	C
516	B	566	A	616	D	666	A	716	A	766	B	816	D	866	A	916	D	966	B
517	E	567	C	617	A	667	A	717	C	767	D	817	A	867	A	917	C	967	
518	B	568	C	618	A	668	A	718	A	768	D	818	C	868	C	918	C	968	B
519	A	569	A	619	B	669	D	719	C	769	A	819	D	869	D	919	D	969	
520	C	570	A	620	D	670	D	720	D	770	C	820	C	870	B	920	D	970	
521	B	571	A	621	C	671	A	721	D	771	B	821	D	871	A	921	A	971	C
522	E	572	B	622	D	672	A	722	C	772	D	822	A	872	E	922	D	972	A
523	B	573	B	623	D	673	C	723	C	773	A	823	B	873	D	923	A	973	C
524	D	574	C	624	B	674	B	724	D	774	A	824	A	874	B	924	A	974	
525	D	575	D	625	A	675	C	725	B	775	B	825	A	875	B	925	B	975	D
526	B	576	C	626	D	676	D	726	A	776	B	826	B	876	C	926	B	976	C
527	B	577	D	627	B	677	C	727	B	777	D	827	B	877	A	927	A	977	
528	A	578	B	628	A	678	A	728	B	778	B	828	B	878	B	928	B	978	
529	A	579	A	629	A	679	B	729	D	779	C	829	C	879	C	929	B	979	D
530	D	580	B	630	A	680	D	730	D	780	C	830	B	880	B	930	D	980	B
531	C	581	B	631	B	681	C	731	A	781	C	831	D	881	D	931	A	981	A
532	C	582	A	632	B	682	C	732	A	782	D	832	C	882	A	932	D	982	A
533	C	583	C	633	A	683	A	733	A	783	C	833	A	883	C	933	C	983	B
534	D	584	B	634	B	684	C	734	D	784	C	834	C	884	B	934	B	984	D
535	C	585	A	635	C	685	A	735	C	785	A	835	A	885	A	935	C	985	A
536	B	586	B	636	B	686	A	736	C	786	D	836	A	886	D	936		986	A
537	C	587	C	637	B	687	C	737	B	787	B	837	B	887	A	937	D	987	C
538	A	588	D	638	C	688	B	738	A	788	A	838	C	888	C	938	D	988	B
539	B	589	A	639	D	689	B	739	D	789	A	839	B	889	C	939	D	989	B
540	A	590	C	640	B	690	A	740	A	790	B	840	B	890	B	940	C	990	C
541	C	591	A	641	A	691	A	741	C	791	B	841	B	891	D	941	D	991	D
542	B	592	D	642	A	692	D	742	B	792	C	842	D	892	D	942	C	992	A
543	B	593	A	643	B	693	B	743	D	793	B	843	A	893	D	943	D	993	A
544	B	594	D	644	B	694	D	744	D	794	A	844	A	894	A	944	C	994	B
545	D	595	C	645	B	695	A	745	D	795	B	845	C	895	C	945		995	A
546	B	596	B	646	B	696	B	746	C	796	D	846	C	896	C	946	E	996	B
547	D	597	D	647	C	697	C	747	B	797	A	847	C	897	C	947	D	997	D
548	C	598	D	648	C	698	B	748	A	798	A	848	C	898	D	948	B	998	B
549	B	599	B	649	A	699	D	749	A	799	C	849	B	899	B	949	C	999	A
550	C	600	D	650	A	700	D	750	B	800	B	850	D	900	A	950	B	1000	B

1001	C	1051	C	1101	D	1151	C	1201	A	1251	D
1002	A	1052	A	1102	D	1152	A	1202	D	1252	A
1003	C	1053	A	1103	A	1153	D	1203	A	1253	C
1004	D	1054	D	1104	B	1154	C	1204	B	1254	A
1005	A	1055	C	1105	D	1155	C	1205	B	1255	C
1006	C	1056	A	1106	D	1156	D	1206	B	1256	D
1007	D	1057	A	1107	B	1157	B	1207	D	1257	B
1008	C	1058	D	1108	D	1158	D	1208	D	1258	D
1009	D	1059	A	1109	D	1159	B	1209	D	1259	D
1010	A	1060	C	1110	A	1160	C	1210	C	1260	D
1011	B	1061	C	1111	A	1161	C	1211	B	1261	C
1012	A	1062	B	1112	D	1162	B	1212	B	1262	A
1013	A	1063	A	1113	A	1163	D	1213	A	1263	C
1014	B	1064	C	1114	C	1164	B	1214	A	1264	A
1015	B	1065	C	1115	B	1165	D	1215	B	1265	C
1016	B	1066	A	1116	B	1166	B	1216	C	1266	B
1017	C	1067	A	1117	D	1167	B	1217	C	1267	B
1018	B	1068	C	1118	C	1168	D	1218	A	1268	C
1019	D	1069	A	1119	A	1169	A	1219	B	1269	C
1020	C	1070	C	1120	C	1170	B	1220	B	1270	A
1021	A	1071	D	1121	D	1171	A	1221	D	1271	A
1022	C	1072	C	1122	B	1172	A	1222	C	1272	B
1023	A	1073	B	1123	A	1173	C	1223	A	1273	B
1024	A	1074	D	1124	D	1174	B	1224	B	1274	D
1025	B	1075	C	1125	C	1175	B	1225	A	1275	D
1026	C	1076	A	1126	A	1176	A	1226	D	1276	B
1027	B	1077	A	1127	A	1177	D	1227	D	1277	B
1028	B	1078	B	1128	C	1178	A	1228	B	1278	C
1029	B	1079	D	1129	D	1179	C	1229	B	1279	B
1030	D	1080	C	1130	C	1180	C	1230	D	1280	D
1031	A	1081	A	1131	C	1181	C	1231	A	1281	D
1032	B	1082	A	1132	D	1182	D	1232	A	1282	B
1033	B	1083	A	1133	D	1183	C	1233	B	1283	D
1034	C	1084	D	1134	B	1184	C	1234	D	1284	D
1035	D	1085	A	1135	D	1185	C	1235	C	1285	
1036	C	1086	B	1136	D	1186	D	1236	B	1286	
1037	C	1087	A	1137	B	1187	D	1237	A	1287	
1038	C	1088	D	1138	D	1188	C	1238	D	1288	
1039	C	1089	B	1139	B	1189	D	1239	C	1289	
1040	C	1090	B	1140	B	1190	B	1240	C	1290	
1041	C	1091	A	1141	B	1191	A	1241	B	1291	
1042	C	1092	C	1142	B	1192	D	1242	A	1292	
1043	A	1093	C	1143	D	1193	D	1243	A	1293	
1044	B	1094	B	1144	D	1194	B	1244	D	1294	
1045	D	1095	B	1145	B	1195	A	1245	A	1295	
1046	B	1096	D	1146	A	1196	A	1246	C	1296	
1047	D	1097	B	1147	A	1197	B	1247	D	1297	
1048	D	1098	D	1148	C	1198	B	1248	A	1298	
1049	B	1099	A	1149	D	1199	A	1249	A	1299	
1050	C	1100	D	1150	D	1200	B	1250	A	1300	

SKN